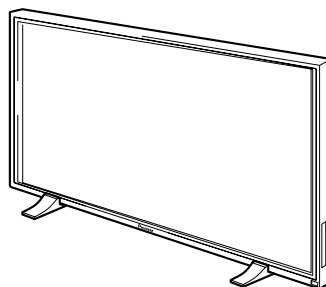


Service Manual

Pioneer



The service manual ARP3075 was revised in October, 2000. Please use this revised edition instead of the 1st one.

ORDER NO.
ARP3075

PLASMA DISPLAY

PDP-502MX PDP-502MXE

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	PDP-502MX	PDP-502MXE		
LUCBW/1	○	—	AC100 – 120V	
YVLDK/1	—	○	AC100 – 240V	

		IC INFORMATION

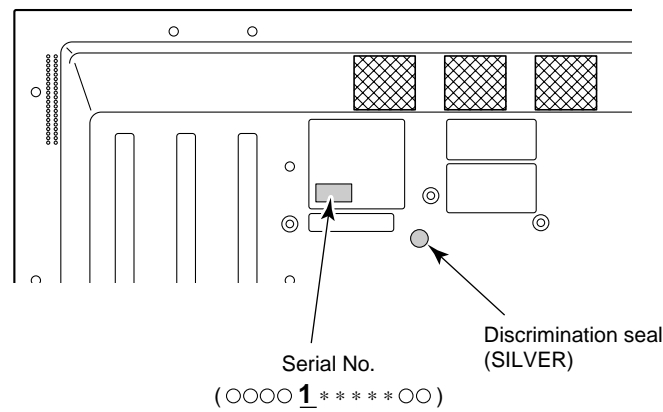
- In PDP-502MX and PDP-502MXE, there are two different models (original model and value analysis model) respectively. Confirm the mark and serial No. of the product Rear side, and use each service manual. Refer to "Confirm it".

CONTENTS

Confirm it	2	
1. SAFETY INFORMATION	3	
2. EXPLODED VIEWS AND PARTS LIST	6	
3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM	18	
(For SCHEMATIC DIAGRAM, refer to ARP3078)		
4. PCB DIAGRAM	Refer to ARP3078	
5. PCB PARTS LIST	Refer to ARP3078	
6. ADJUSTMENT	46	
		7. GENERAL INFORMATION
		7.1 DIAGNOSIS
		7.1.1 DIAGNOSIS METHOD
		7.1.2 DISASSEMBLY
		7.1.3 WIRING
		7.2 IC
		8. PANEL FACILITIES AND SPECIFICATIONS
		76

Confirm it

■ PRODUCT REAR SIDE



■ SERIAL NO.

Serial No.	Service Manual
○○○○ <u>1</u> *****○○	ARP3075 [This manual]
	ARP3078
OTHER	ARP3037
	ARP3044

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.



WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65



NOTICE

(FOR CANADIAN MODEL ONLY)

Fuse symbols  (fast operating fuse) and/or  (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE

(POUR MODÈLE CANADIEN SEULEMENT)

Les symboles de fusible  (fusible de type rapide) et/ou  (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

1.1 SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and service technician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
 - Always return the internal wiring to the original styling.
 - Attach parts (Ground, Rear Cover, Shield Case) surely after disassembly.

7. Perform the following precautions for the PDP panel.

- When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
- Make sure that the panel vent does not break. (Check that the cover is attached.)
- Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.

8. Pay attention to the following.

- Be sure to wire the fan. If the fan does not work, the temperature will rise and cause the protection circuit to operate.
- When the front case is removed, infrared ray is radiated and may disturb reception of the remote control unit.
- Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

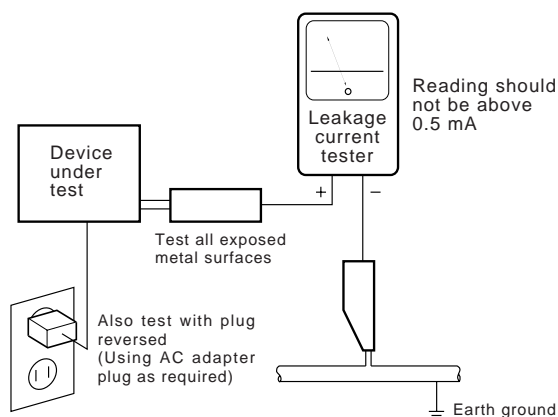
With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of $0.3M\Omega$ and a maximum resistor reading of $5M\Omega$. Any resistor value below or above this range indicates an abnormality which requires corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).

Turn the AC power switch on.

Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.



AC Leakage Test

1.2 PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

1.3 CHARGED SECTION AND HIGH VOLTAGE GENERATING POINT

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.

If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

■ Charged Section (Power supply primary side)

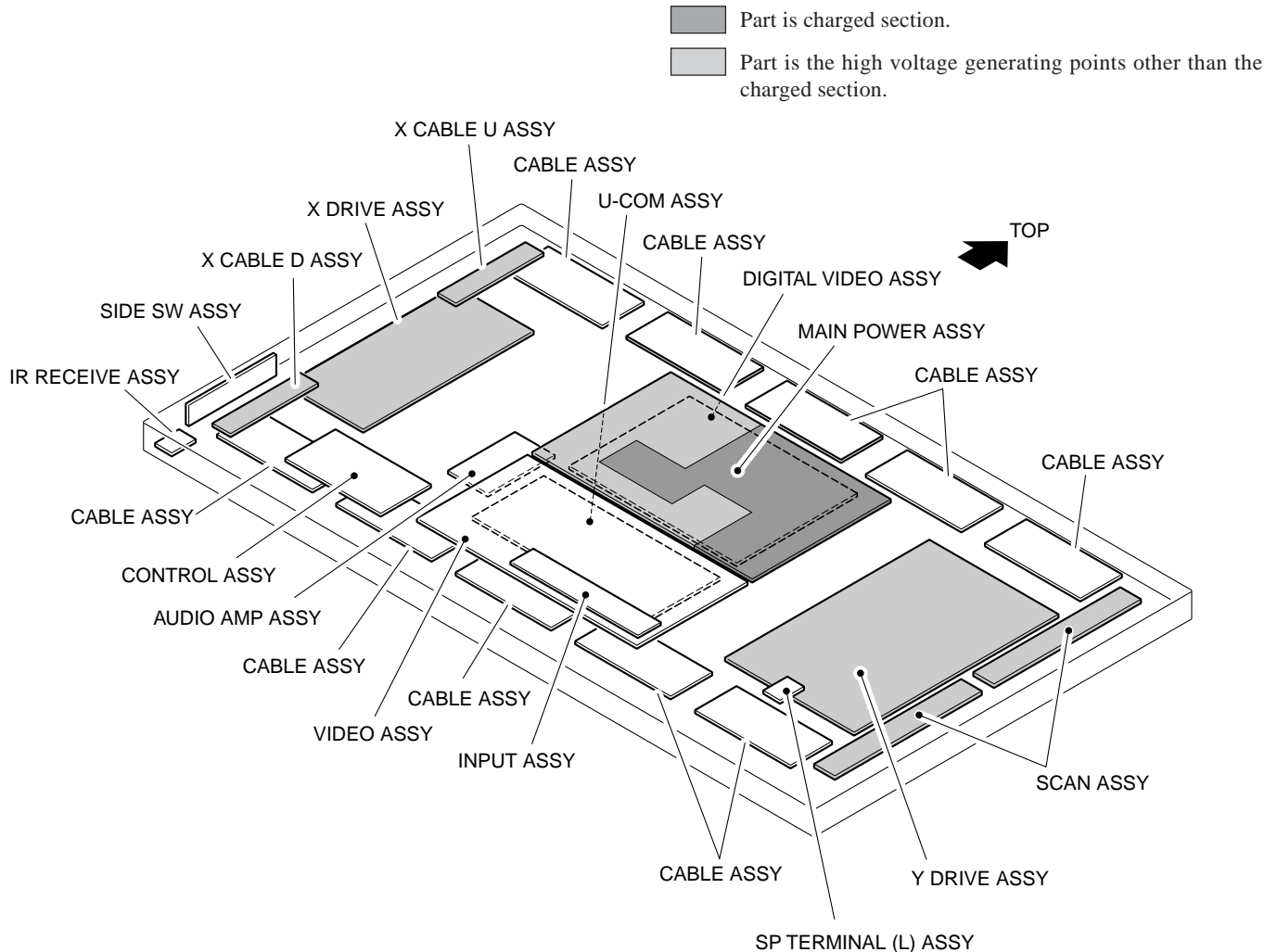
1. AC Power Cord
2. AC Inlet with Filter
3. Power Switch (S1)
4. Fuse (In the MAIN POWER ASSY)
5. STB Transformer and Converter Transformer
(In the MAIN POWER ASSY)
6. Other primary side of the MAIN POWER ASSY

■ High Voltage Generating Point

The places where voltage is 100V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.

1. POWER SUPPLY MODULE (170V)
2. X DRIVE ASSY (170V)
3. Y DRIVE ASSY (–200V to 250V)
4. SCAN ASSY (250V)

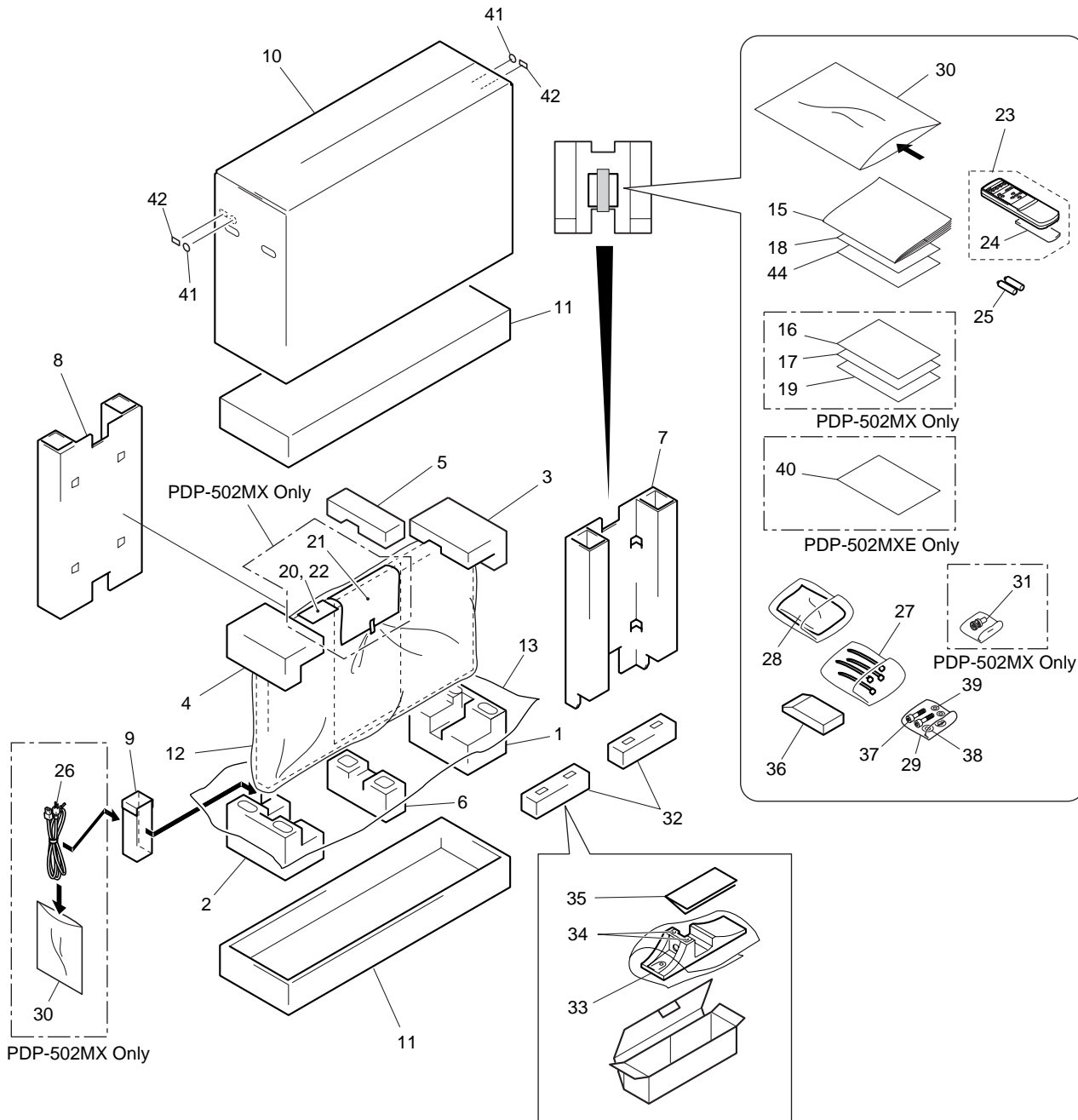
For the places, refer to the EXPLODED VIEWS, the SCHEMATIC DIAGRAM and the PCB CONNECTION DIAGRAM sections.



2. EXPLODED VIEWS AND PARTS LIST

- NOTES :
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screw adjacent to ∇ mark on the product are used for disassembly.

2.1 PACKING



(1) PACKING PARTS LIST

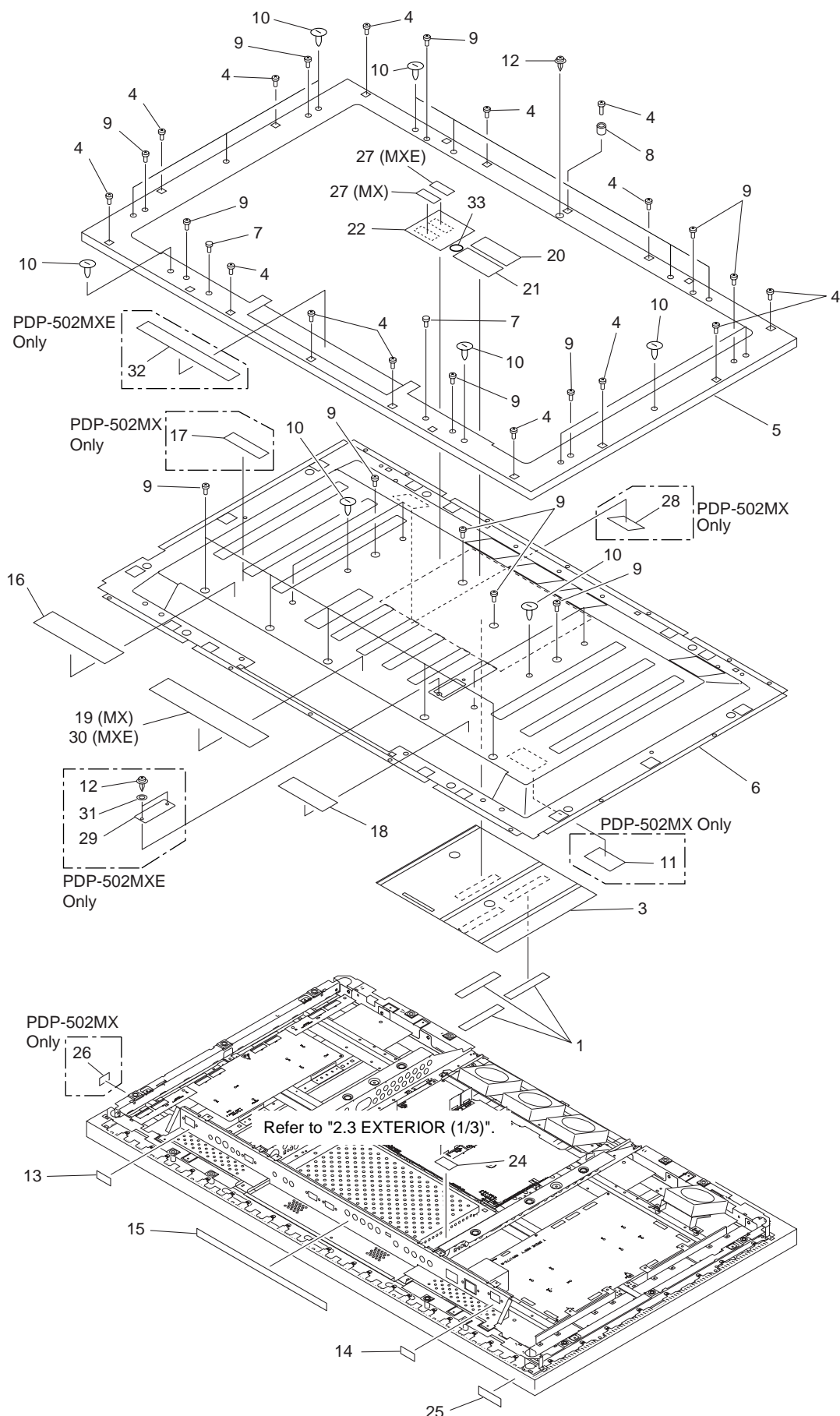
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Under Pad R	AHA2239	⚠	26	AC Power Cord	See contrast table (2)
	2	Under Pad L	AHA2240		27	Binder Assy	AEC1758
	3	Upper Pad R	AHA2241		28	Cleaning Cloth	AED1174
	4	Upper Pad L	AHA2242	NSP	29	Vinyl Bag (for Screw, Nut)	AHG-064
	5	Upper Pad C	AHA2243	NSP	30	Literature Bag	AHG-117
	6	Under Pad C	AHA2245		31	Pin/BNC Conversion Adaptor	See contrast table (2)
	7	Front Carton	AHB1210		32	Display Stand	AMR3225
	8	Rear Carton	AHB1211	NSP	33	Stand Bracket	ANG2351
	9	Code Case	AHC1033		34	Screw	CPZ30P080FZK
	10	Upper Carton	See contrast table (2)		35	Caution Sheet	ARM1175
	11	Under Carton	AHD3037		36	Remote Control Unit Case	AMR3231
	12	Mirror Mat	AHG1284		37	Hex Hole Bolt (M8×40)	SMZ80H400FZB
	13	Polyethylene Sheet	AHG1302		38	Washer	WAX1F200K320
	14	.....			39	Washer	WB80FZB
	15	Operating Instructions	See contrast table (2)		40	Plasma Caution Sheet	See contrast table (2)
	16	Plasma Caution Sheet	See contrast table (2)		41	Seal	AAX2817
	17	Plasma Caution Sheet	See contrast table (2)	NSP	42	Label	VRW1629
	18	Caution Sheet	ARM1168		43	Pad Set	AHA2269
	19	Caution Sheet	See contrast table (2)		44	Caution Sheet	ARM1194
NSP	20	Warranty Card	See contrast table (2)				
NSP	21	Warranty Card	See contrast table (2)	Pad set (AHA2269) is composed of the following parts.			
NSP	22	Vinyl Pouch	See contrast table (2)	43	Pad Set	AHA2269	
	23	Remote Control Unit (CU-V159)	AXD1446	— 1	Under Pad R	AHA2239	
	24	Battery Cover	AZN2098	— 2	Under Pad L	AHA2240	
NSP	25	AA (R6/UM-3) Batteries	See contrast table (2)	— 3	Upper Pad R	AHA2241	
				— 4	Upper Pad L	AHA2242	
				— 5	Upper Pad C	AHA2243	
				— 6	Under Pad C	AHA2245	

(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
	10	Upper Carton	AHD3035	AHD3043	
	15	Operating Instructions (English/French/Japanese)	ARD1039	Not used	
	15	Operating Instructions (English/French/German/Italian/Dutch/Spanish)	Not used	ARE1358	
	16	Plasma Caution Sheet	ARM1145	Not used	
	17	Plasma Caution Sheet	ARM1147	Not used	
	19	Caution Sheet	ARM1176	Not used	
NSP	20	Warranty Card	ARY1093	Not used	
NSP	21	Warranty Card	ARY1102	Not used	
NSP	22	Vinyl Pouch	AHG-195	Not used	
NSP	25	AA (R6/UM-3) Batteries	AEX1025	VEM1011	
⚠	26	AC Power Cord	ADG1178	Not used	
	31	Pin/BNC Conversion Adaptor	AKX1052	Not used	
	40	Plasma Caution Sheet	Not used	ARM1149	

2.2 REAR CASE SECTION



(1) REAR CASE SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Siricon Sheet L	AEH1034	NSP	24	Earth Label	BAX1014
	2	.....			25	Serial Seal	AAX2609
	3	Barrier	AMR3166	NSP	26	Display Label	See contrast table (2)
	4	Screw	BBZ40P160FZK	NSP	27	Label	VRW1629
	5	Rear Case Frame	See contrast table (2)		28	Barrier Caution Label	See contrast table (2)
NSP	6	Rear Case	See contrast table (2)		29	Connector Cover	See contrast table (2)
	7	Stand Bolt	ABA1277		30	Earth Plate	See contrast table (2)
	8	Screw Collar	AEC1848		31	Washer	See contrast table (2)
	9	Screw	AMZ30P100FZK		32	Terminal Label N	See contrast table (2)
	10	Hole Rivet	AMR2969		33	Seal	AAX2816
	11	Solder Warning Label	See contrast table (2)		34	Rear Case Service Assy	See contrast table (2)
	12	Screw Rivet	AEC1852				
	13	Terminal Label D	AAX2721				
	14	Terminal Label F	AAX2723				
	15	Terminal Label G	See contrast table (2)				
	16	Terminal Label A	See contrast table (2)				
	17	Caution Label	See contrast table (2)				
	18	Terminal Label C	See contrast table (2)				
	19	Terminal Label B	See contrast table (2)				
	20	Bolt Caution Label	See contrast table (2)				
	21	Cleaning Label	See contrast table (2)				
NSP	22	Name Label	See contrast table (2)				
	23	.....				

Note) Rear Case Service Assy is composed of the following parts.

	34	Rear Case Service Assy	AWL1461 (MX)
			AWL1457 (MXE)
NSP	3	— Barrier	AMR3166
	6	— Rear Case	ANE1596 (MX)
			ANE1587 (MXE)
	11	— Solder Warning Label	AAX2644
	20	— Bolt Caution Label	AAX2728 (MXE only)
	28	— Barrier Caution Label	AAX2759
	30	— Earth Plate	ANK1639 (MXE only)

(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
NSP	5	Rear Case Frame	AMR3147	AMR3170	
	6	Rear Case	ANE1596	ANE1587	
	11	Solder Warning Label	AAX2644	Not used	
	15	Terminal Label G	AAX2724	Not used	
	15	Terminal Label E	Not used	AAX2722	
	16	Terminal Label A	AAX2718	Not used	
	16	Terminal Label L	Not used	AAX2734	
	17	Caution Label	ARW1087	Not used	
	18	Terminal Label C	AAX2720	Not used	
	18	Terminal Label M	Not used	AAX2735	
NSP	19	Terminal Label B	AAX2719	Not used	
	20	Bolt Caution Label	AAX2727	AAX2728	
	21	Cleaning Label	AAX2751	AAX2766	
NSP	22	Name Label	AAL2309	AAL2313	
NSP	26	Display Label	AAX-359	Not used	
	28	Barrier Caution Label	AAX2759	Not used	
	29	Connector Cover	Not used	ANG2355	
	30	Earth Plate	Not used	ANK1641	
	31	Washer	Not used	ABE1077	
	32	Terminal Label N	Not used	AAX2736	
	34	Rear Case Service Assy	AWL1461	AWL1457	Note

2.3 EXTERIOR (1/3)



(1) EXTERIOR (1/3) SECTION PARTS LIST

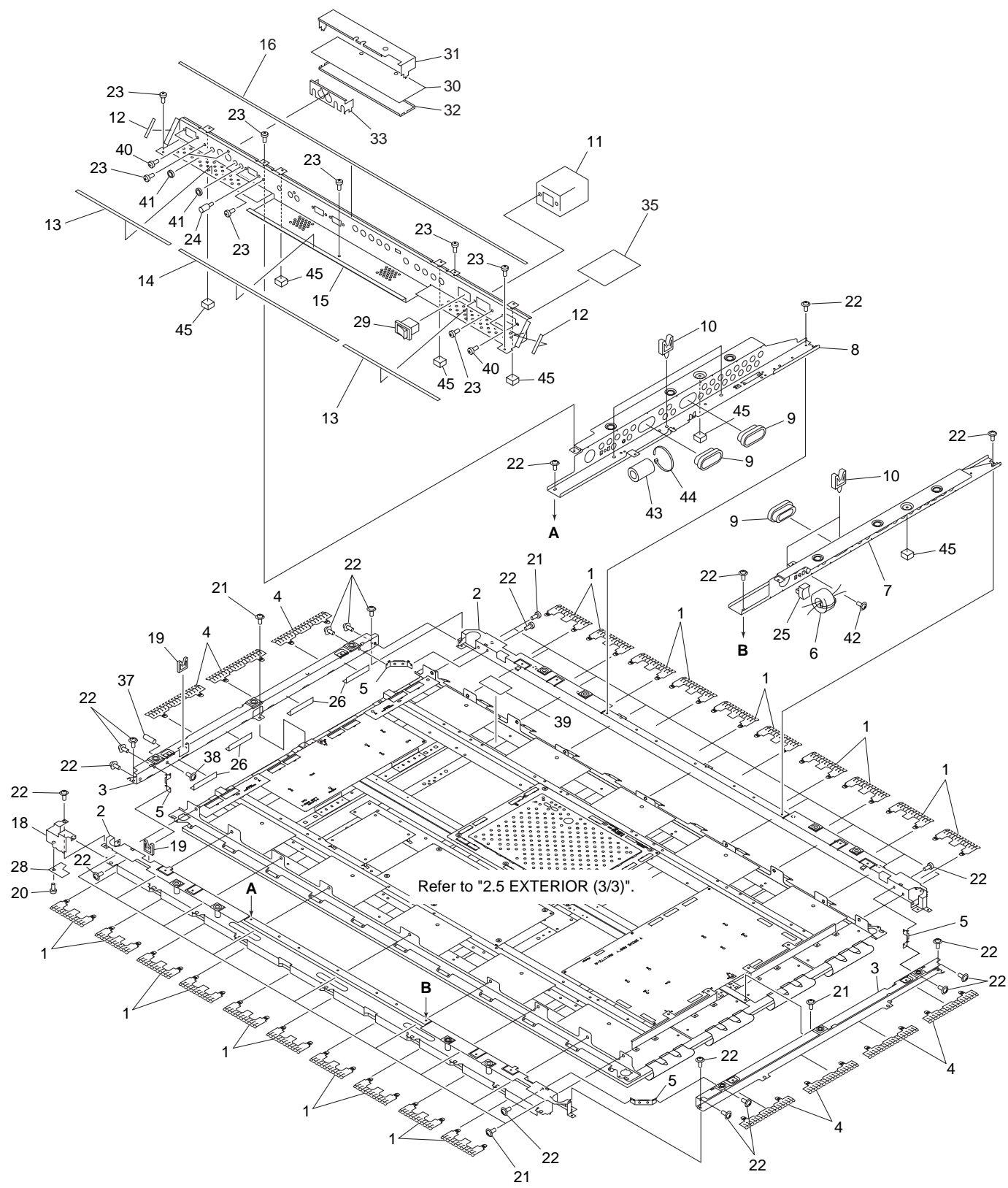
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
⚠	1	MAIN POWER ASSY	AWZ6506	31	Fan Angle Cushion	AED1193	
	2	Fuse (10A, FU101)	AEK1071	32	Screw	PPZ50P100FZK	
	3	VIDEO ASSY	See contrast table (2)	33	PCB Hinge	AEC1807	
	4	.....		34	Screw	AMZ30P060FMC	
	5	.....		35	RCC CONTROL A ASSY	AWZ6507	
NSP	6	.....		36	RCC CONTROL B ASSY	AWZ6508	
	7	Chassis	ANA1605	37	RCC CONTROL C ASSY	AWZ6509	
	8	Insulating Sheet	AMR3199	38	OTL CONTROL A ASSY	AWZ6510	
	9	Fan Frame A	ANG2330	39	OTL CONTROL B ASSY	AWZ6511	
	10	Wire Saddle	AEC1745	40	OTL CONTROL C ASSY	AWZ6512	
NSP	11	INPUT ASSY	AWZ6496	41	Screw	BPZ30P080FZK	
	12	Fan Frame C	ANG2393	42	Hexagon Screw	BBA1051	
	13	Fan Motor	AXM1036	43	Nut	ABN1033	
	14	Fan Label	AAX2785	44	Insulation Sheet S	AMR3233	
	15	Locking Card Spacer	AEC1736	45	Insulation Sheet L	AMR3234	
	16	.....				
	17	SENSOR (A) ASSY	AWZ6501				
	18	FAN CABLE (A) ASSY	AWZ6502				
	19	FAN CABLE (B) ASSY	AWZ6497				
	20	Screw	BMZ30P060FCU				
	21	Screw	BBZ40P160FZK				
	22	Spacer Screw	AEF1028				
	23	Wire Barrier	AMR3209				
	24	Nylon Rivet	AEC1671				
	25	.....				
	26	.....				
	27	PCB Mold	AMR2115				
	28	.....				
	29	.....				
	30	Screw	ABZ30P160FCU				

(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
	3	VIDEO ASSY	AWZ6495	AWZ6516	

2.4 EXTERIOR (2/3)



(1) EXTERIOR (2/3) SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	Frame Shield H	ANK1609	NSP	31	Control Shield Case	ANK1626
	2	Frame H	ANG2396	NSP	32	Control Shield Cover	ANK1627
	3	Frame V	ANG2344	NSP	33	Control Shield Plate	ANG2380
	4	Frame Shield V	ANK1610		34	.....
	5	Corner Holder	ANG2347		35	SP TERMINAL (L) ASSY	AWZ6505
	6	Ferrite Core (L1)	ATX1037		36	.....
	7	Sub Frame R	ANG2395		37	Spacer	AEC1847
	8	Sub Frame L	ANG2419		38	Screw	AMZ30P100FZK
	9	Bush C	AEC1740	NSP	39	Drive Voltage Label	ARW1097
	10	Wire Saddle	AEC1745		40	Screw	BPZ30P080FZK
⚠	11	AC Inlet with Filter (CN1)	See contrast table (2)		41	Nut	ABN1033
	12	Shield Gasket B	ANK1646		42	Screw	PMB40P080FMC
	13	Shield Gasket D	See contrast table (2)		43	Ferrite Core (L2)	ATX1031
	14	Shield Gasket C	ANK1647		44	Binder	AEC1851
	15	Terminal Panel	See contrast table (2)		45	Dust Guard	AEB1362
	16	Shield Gasket E	See contrast table (2)				
	17	.....				
NSP	18	IR Holder	ANG2346				
	19	Edging Saddle	AEC1737				
	20	Nylon Rivet	AEC1671				
	21	Screw	AMZ30P080FCU				
	22	Screw	AMZ30P060FMC				
	23	Screw	BMZ30P060FCU				
	24	Hexagon Screw	BBA1051				
	25	Ferrite Core Holder	AEC1818				
	26	FPC Cushion	AEB1341				
	27	.....				
	28	IR RECEIVE ASSY	AWZ6498				
⚠	29	Power Switch (S1)	BSM1006				
	30	CONTROL ASSY	AWZ6504				

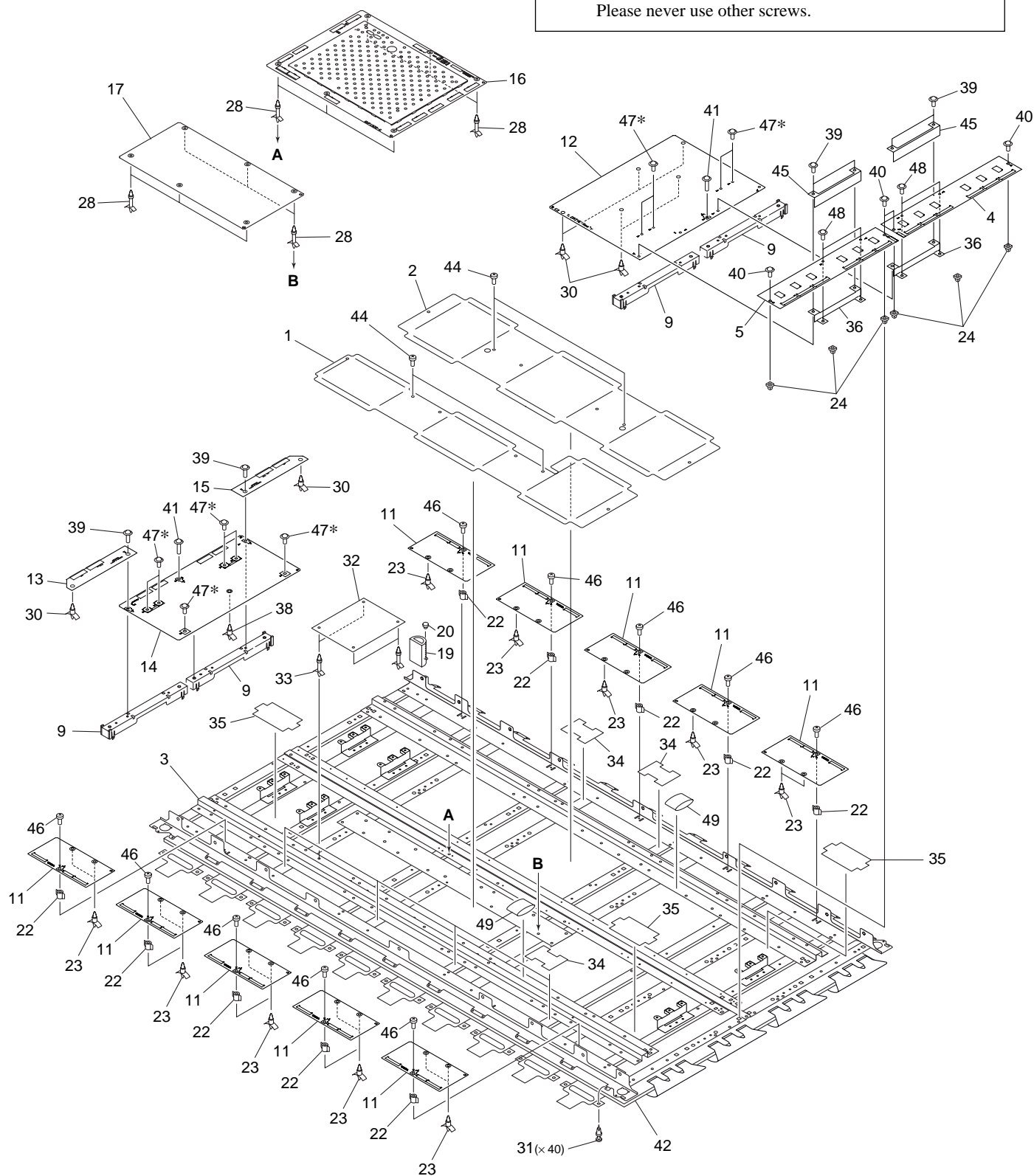
(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
⚠	11	AC Inlet with Filter (CN1)	AKP1210	AKP1209	
	13	Shield Gasket D	ANK1648	ANK1614	
	15	Terminal Panel	ANG2341	ANG2353	
	16	Shield Gasket E	ANK1649	ANK1634	

2.5 EXTERIOR (3/3)

Note*: No.47 is a special screw. Please fix to an original place.
Please never use other screws.



(1) EXTERIOR (3/3) SECTION PARTS LIST

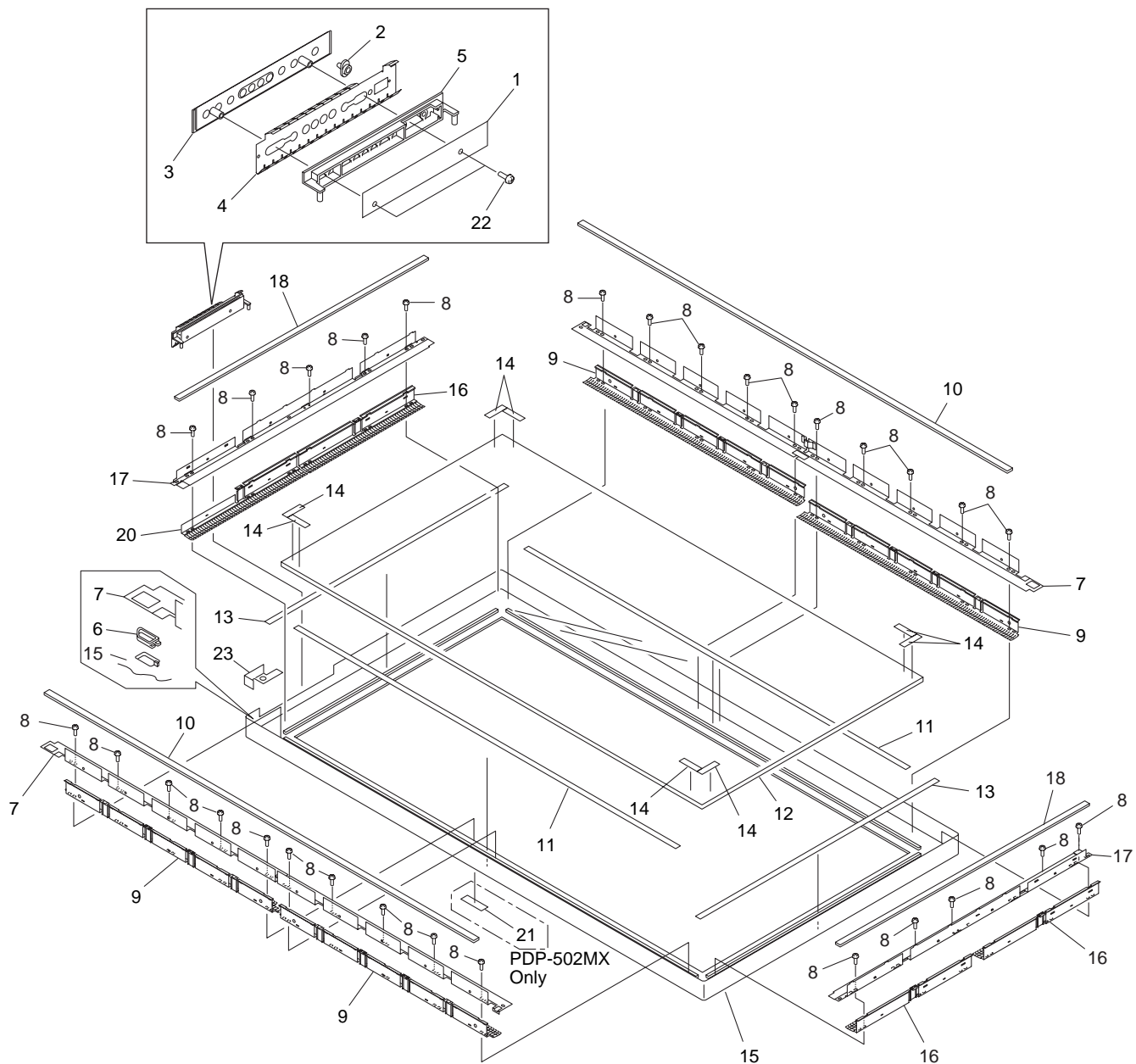
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
NSP	1	Panel Shield S	ANK1633		31	Plastic Rivet	AMR1066
NSP	2	Panel Shield L	ANK1632		32	AUDIO AMP ASSY	AWZ6503
NSP	3	Frame Assy	ANA1633	NSP	33	PCB Spacer	AEC1446
	4	SCAN (A) ASSY	AWZ6518	NSP	34	Blind Sheet S	AMR3202
	5	SCAN (B) ASSY	AWZ6519	NSP	35	Blind Sheet L	AMR3203
	6	.....		NSP	36	Hot Plate	ANG2416
	7	.....			37	.....
	8	.....			38	Circuit Board Spacer	AEC1795
	9	PCB Spacer	AMR3155		39	Screw	ABZ30P160FCU
	10	.....			40	Screw	BBZ40P120FZK
	11	CABLE ASSY	AWV1843		41	Screw	IBZ30P250FCU
	12	Y DRIVE ASSY	AWV1847	NSP	42	Plasma Panel Assy	AAV1236
	13	X CABLE D ASSY	AWZ6515		43	.....
	14	X DRIVE ASSY	AWV1842		44	Screw	ABZ30P060FCU
	15	X CABLE U ASSY	AWZ6514		45	Hot Plate Barrier	AMR3223
	16	DIGITAL VIDEO ASSY	AWV1841		46	Screw	ABA1056
	17	UCOM ASSY	See contrast table (2)		47	Screw	ABA1200
	18	.....			48	Screw	ABZ30P060FCU
NSP	19	Tube Cover	AMR3036		49	Ferrite Core (L4, L5)	ATX1041
NSP	20	Push Rivet	AEC1748				
	21	.....				
	22	Dust Guard Collar	AMR3227				
	23	Locking Spacer	AEC1794				
	24	Screw Grommet	AEC1857				
	25	.....				
NSP	26	.....				
	27	.....				
NSP	28	Circuit Board Spacer	AEC1744				
	29	.....				
	30	Locking Spacer	AEC1796				

(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
	17	UCOM ASSY	AWZ6499	AWZ6520	

2.6 FRONT CASE SECTION



(1) FRONT CASE SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	SIDE SW ASSY	AWZ6500		13	Front Cushion V	AED1192
	2	LED Lens	AAK2695		14	Corner Cushion	AEB1360
	3	Control Name Plate	AAK2757		15	Front Case	See contrast table (2)
	4	Control Shield	ANK1606		16	Panel Shield V	ANK1604
	5	Control Button	AAC1540	NSP	17	Panel Holder V	ANG2337
NSP	6	Lens	AAK2741		18	Panel Cushion V	AED1190
	7	Panel Holder Assy	ANG2386		19	.....
	8	Screw	BPZ30P080FZK	NSP	20	Panel Shield VM	ANK1605
	9	Panel Shield H	ANK1603		21	Pioneer Seal	See contrast table (2)
	10	Panel Cushion H	AED1189		22	Screw	BBZ30P080FMC
	11	Front Cushion H	AED1191		23	Corner Shield	ANK1665
	12	Protect Panel Assy	AMR3228				

(2) CONTRAST TABLE

PDP-502MX/LUCBW/1 and PDP-502MXE/YVLDK/1 are constructed the same except for the following:

Mark	No.	Symbol and Description	Part No.		Remarks
			PDP-502MX LUCBW/1	PDP-502MXE YVLDK/1	
	15	Front Case	AMB2649	AMB2679	
	21	Pioneer Seal	ARW1091	Not used	

2.7 PDP SERVICE ASSY (AWU1030)

PDP SERVICE ASSY (AWU1030) is composed of the following parts.

Please refer to 2.4 and 2.5 for the illustrations of each part.

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
2.4 EXTERIOR (2/3)				OTHERS			
	1	Frame Shield H	ANK1609			Wire Saddle	AEC1797
	2	Frame H	ANG2396			Flat Clamp	AEC1858
	3	Frame V	ANG2344			Cable Clip	AEC1859
	4	Frame Shield V	ANK1610	NSP		FPC (XGA2-Y)	ADY1047
	5	Corner Holder	ANG2347	NSP		FPC (XGA2-X)	ADY1053
				NSP		Address Mojule (IC21-IC40)	MC-16340
	21	Screw	AMZ30P080FCU	PACKING			
	22	Screw	AMZ30P060FMC			Button Bolt	ABA1259
	26	FPC Cushion	AEB1341			Corner Pad	AHA2203
	37	Spacer	AEC1847			Corner Carton	AHA2204
	38	Screw	AMZ30P100FZK			Upper Carton	AHD2970
NSP	39	Drive Voltage Label	ARW1097			Under Carton	AHD2971
2.5 EXTERIOR (3/3)						Packing Sheet	AHG1291
NSP	3	Frame Assy	ANA1633			Holder Plate	AHK1008
NSP	19	Tube Cover	AMR3036			Washer	WB80FZB
NSP	20	Push Rivet	AEC1748				
	23	Locking Spacer	AEC1794				
	24	Screw Grommet	AEC1857				
NSP	28	Circuit Board Spacer	AEC1744				
	30	Locking Spacer	AEC1796				
	31	Plastic Rivet	AMR1066				
NSP	33	PCB Spacer	AEC1446				
NSP	34	Blind Sheet S	AMR3202				
NSP	35	Blind Sheet L	AMR3203				
	38	Circuit Board Spacer	AEC1795				
NSP	42	Plasma Panel Assy	AAV1236				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

For "SCHEMATIC DIAGRAM", refer to the service manual ARP3078 for PDP-502MX.

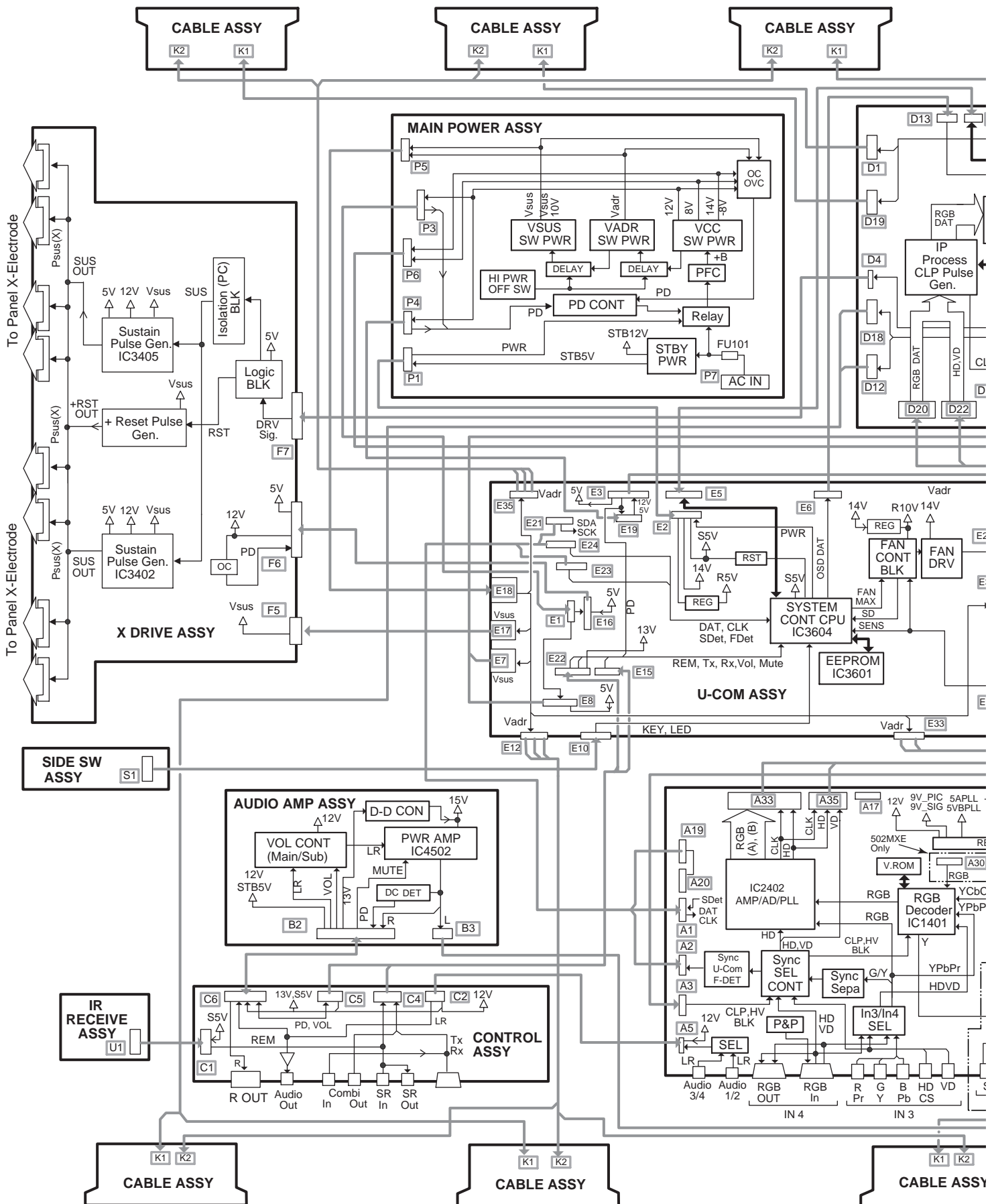
3.1 OVERALL BLOCK DIAGRAM

A

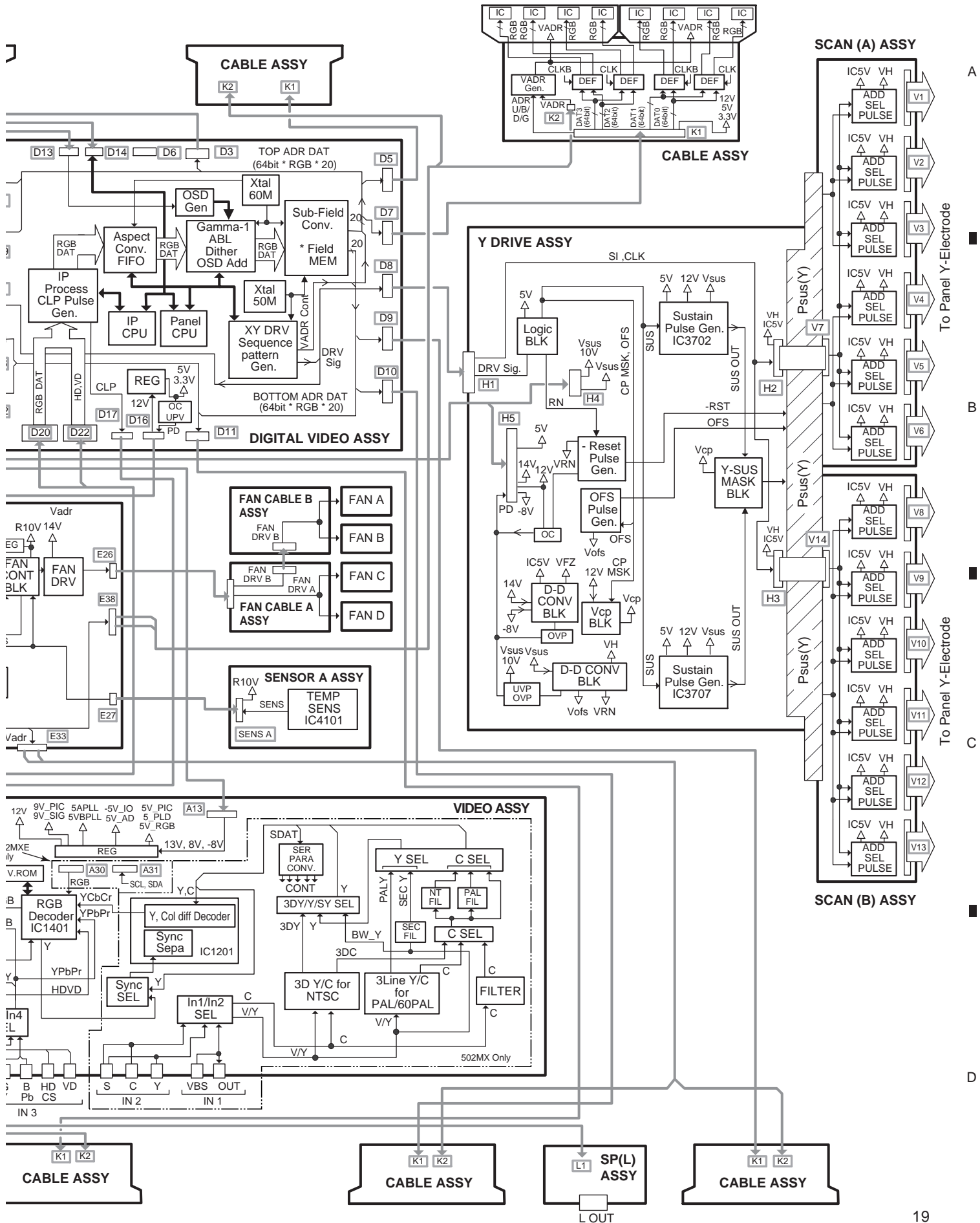
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C

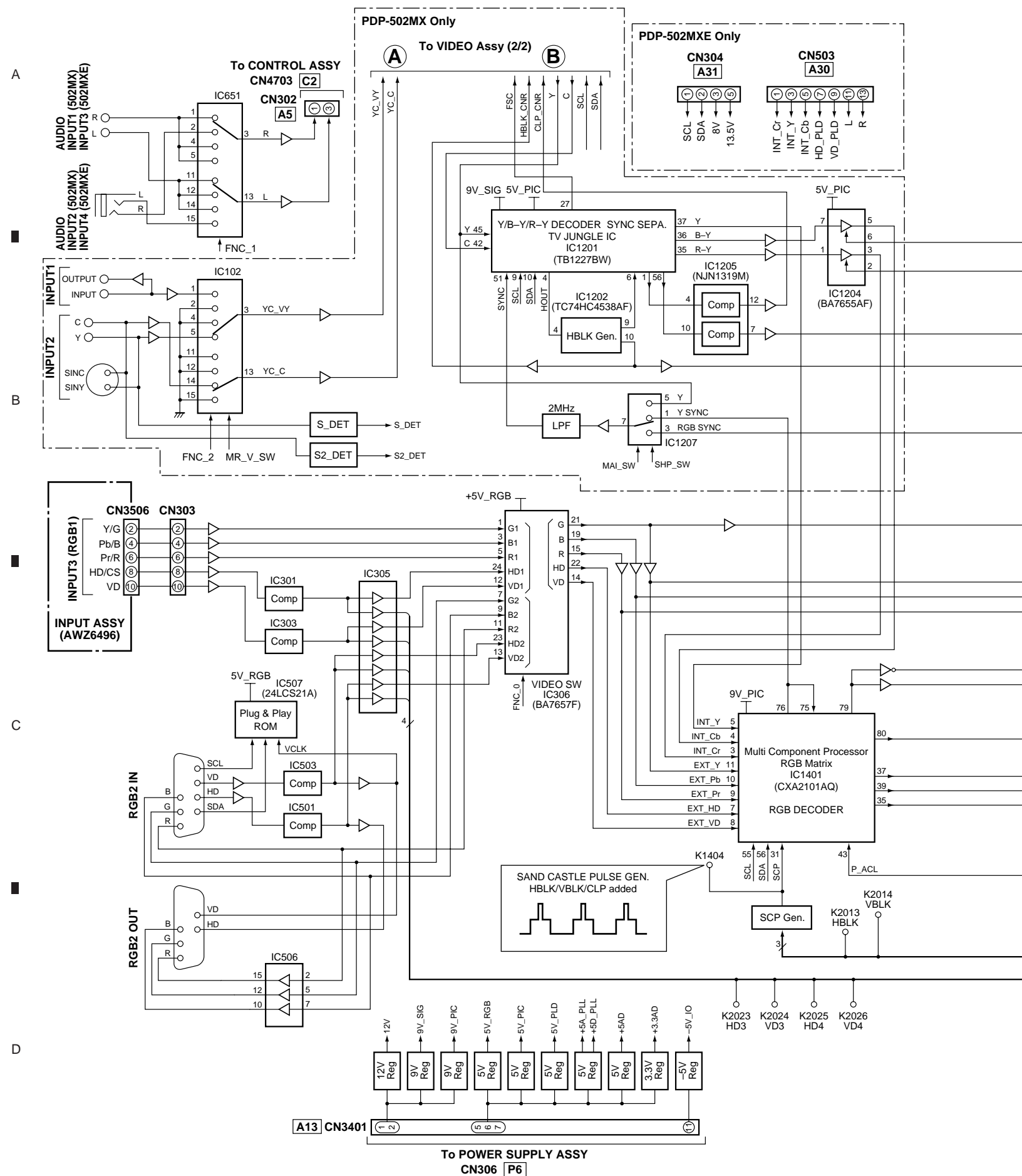
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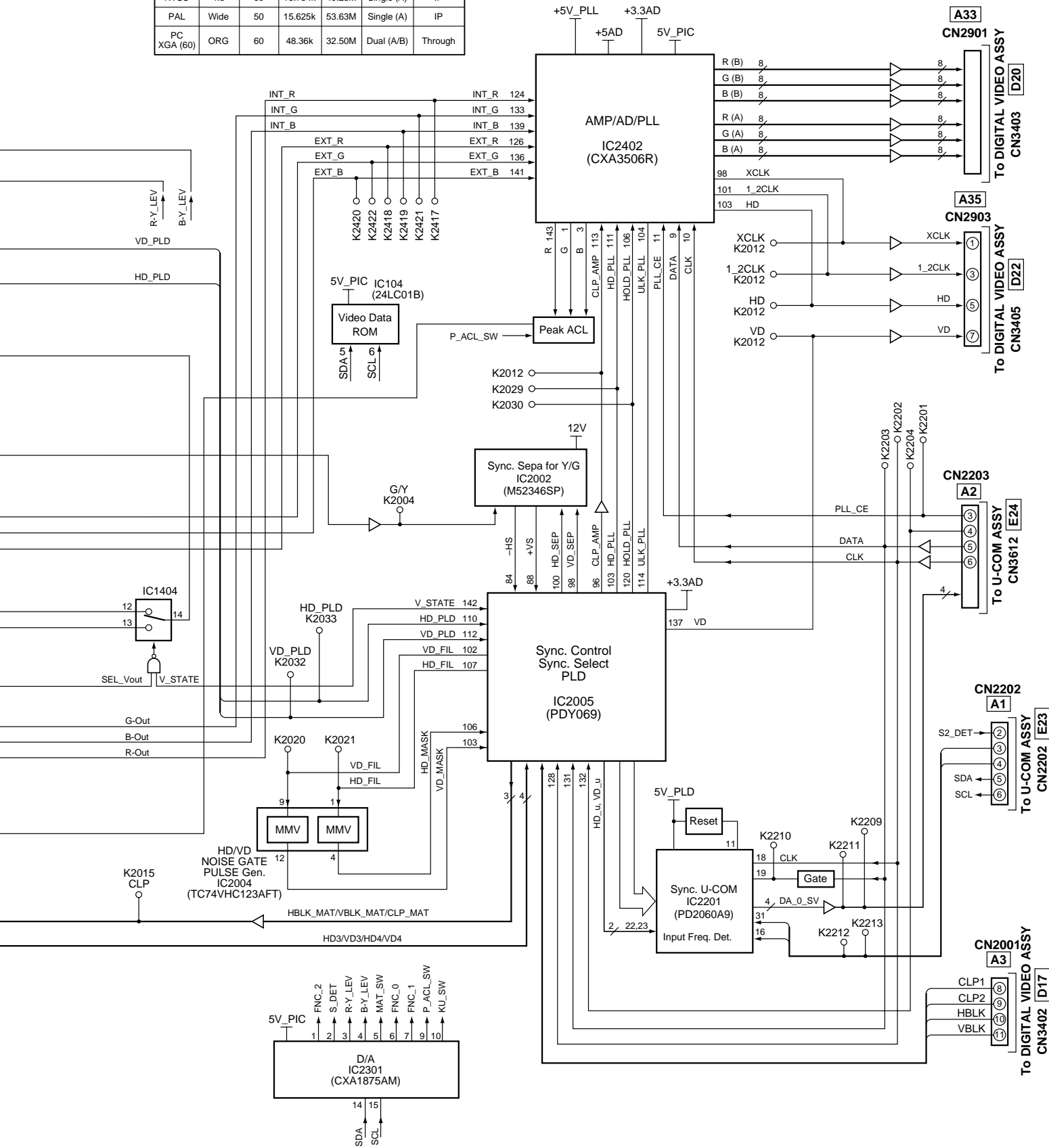
Notes: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "PCB PARTS LIST".
For "PCB PARTS LIST", refer to the service manual ARP3078 for PDP-502MX.



3.2 VIDEO ASSY SECTION (1/2)



IN	Screen	K2904 (VD)	K2903 (HD)	K2901 (CLK)	AD OUT	IP Process
NTSC	4:3	60	15.734k	40.28M	Single (A)	IP
PAL	Wide	50	15.625k	53.63M	Single (A)	IP
PC XGA (60)	ORG	60	48.36k	32.50M	Dual (A/B)	Through



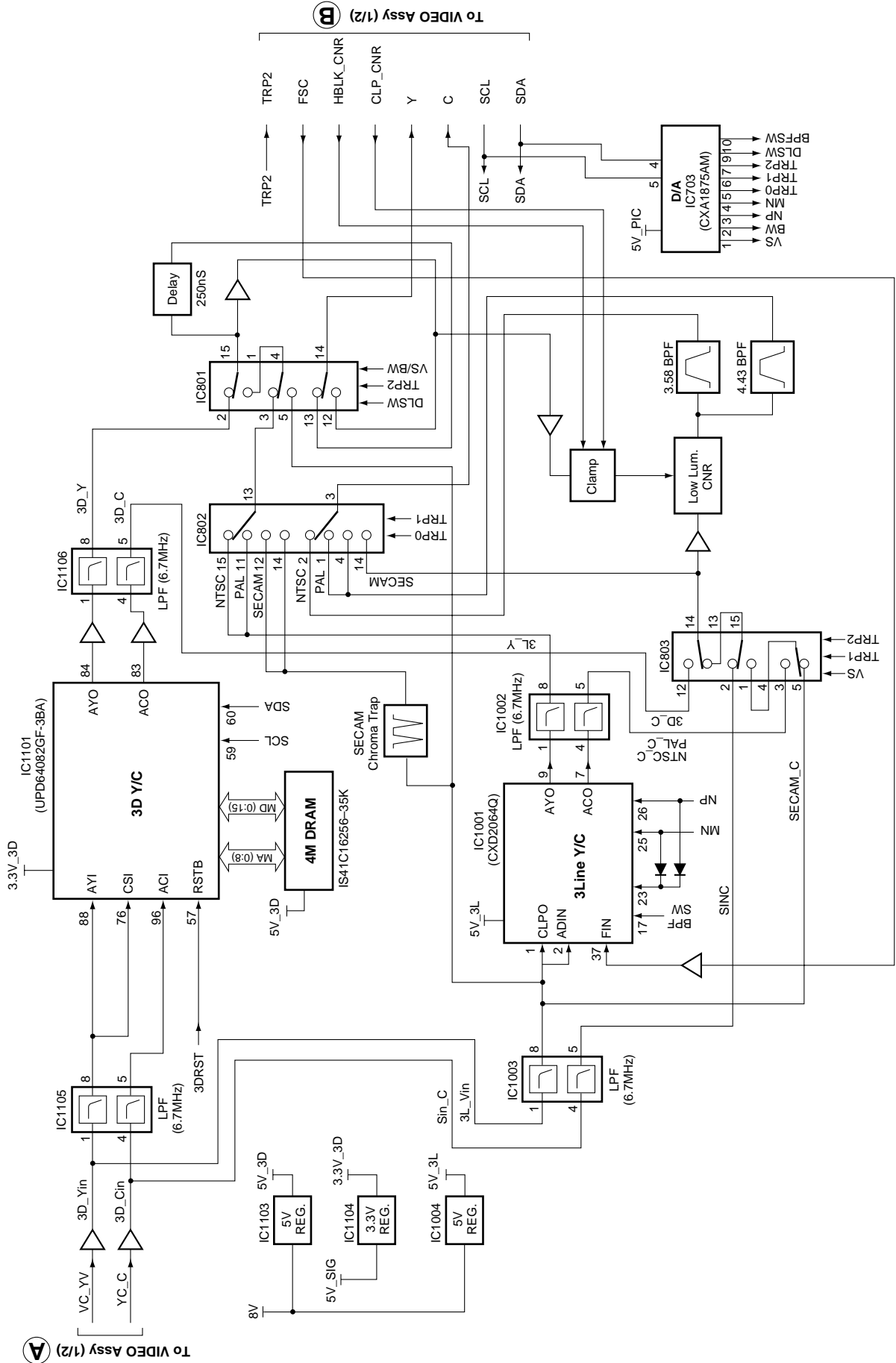
3.3 VIDEO ASSY SECTION (2/2)

A

B

C

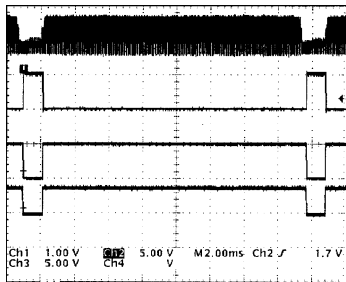
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Waveforms of VIDEO ASSY

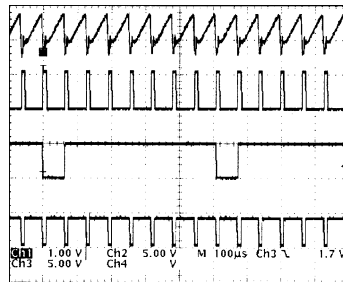
Synchronous Signal Processing Block
(When INPUT1 NTSC RAMP signal is input)

- CH1: VIDEO input
V : 1V/div H : 2msec/div
- CH2: K2032 (VD_PLD), IC2005 Pin 112
V : 5V/div H : 2msec/div
- CH3: K2018 (VD_u), IC2005 Pin 34
V : 5V/div H : 2msec/div
- CH4: K2031 (VD_DSEL), IC2005 Pin 137
V : 3.3V/div H : 2msec/div



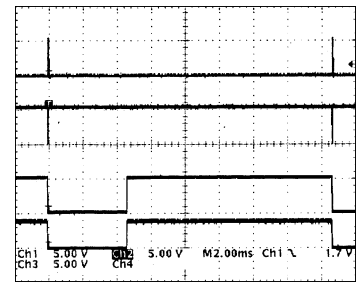
Synchronous Signal Processing Block
(When INPUT1 NTSC RAMP signal is input)

- CH1: VIDEO input
V : 1V/div H : 100msec/div
- CH2: K2033 (HD_PLD), IC2005 Pin 110
V : 5V/div H : 100msec/div
- CH3: K2019 (HD_u), IC2005 Pin 32
V : 5V/div H : 100msec/div
- CH4: K2029 (HD_PLL), IC2005 Pin 118
V : 3.3V/div H : 100msec/div



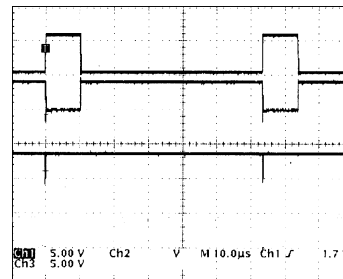
Synchronous Signal Processing Block 2
(INPUT4 PC signal VESA:
1280x1024@60Hz (SXGA@60Hz)
when there is signal input [separate H, V]

- CH1: K2026 (VD_4),
IC2005 Pin71 (VD input)
V : 5V/div H : 2msec/div
- CH2: K2020 (VD_FIL), IC2005 Pin 102
V : 5V/div H : 2msec/div
- CH3: K2018 (VD_u), IC2005 Pin 34
V : 5V/div H : 2msec/div
- CH4: K2031 (VD_DSEL), IC2005 Pin 137
V : 3.3V/div H : 2msec/div



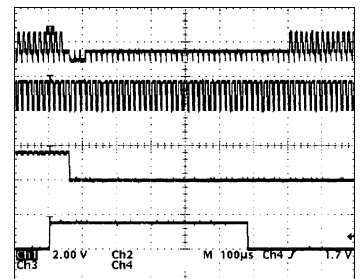
Synchronous Signal Processing Block
(When INPUT1 NTSC RAMP signal is input)

- CH1: K2033 (HD_PLD), IC2005 Pin 110
V : 5V/div H : 10msec/div
- CH2: K2029 (HD_PLL), IC2005 Pin 118
V : 3.3V/div H : 10msec/div
- CH3: K2432 (DIVOUT), IC2402 Pin 103
V : 5V/div H : 10msec/div



Synchronous Signal Processing Block 2
(INPUT4 PC signal VESA:
1280x1024@60Hz (SXGA@60Hz)
when there is signal input [separate H, V]

- CH1: K2004
(SYNC_SEP: input Green signal),
IC2002 Pin4
V : 2V/div H : 100msec/div
- CH2: K2029 (HD_PLL), IC2005 Pin 118
V : 3.3V/div H : 100msec/div
- CH3: K2031 (VD_DSEL), IC2005 Pin 137
V : 3.3V/div H : 100msec/div
- CH4: K2030 (HOLD_PLL), IC2005 Pin 120
V : 3.3V/div H : 100msec/div



Synchronous Signal Processing Block 2

(INPUT4 PC signal VESA:

1280x1024@60Hz (SXGA@60Hz)

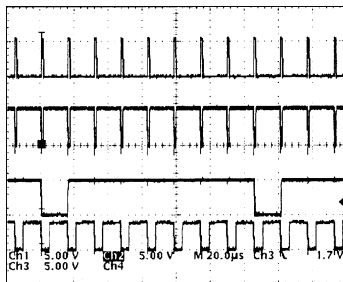
when there is signal input [separate H, V]

CH1: K2025 (HD_4),
IC2005 Pin69 (HD input)
V : 5V/div H : 20msec/div

CH2: K2021 (HD_FIL), IC2005 Pin 107
V : 5V/div H : 20msec/div

CH3: K2019 (HD_u), IC2005 Pin 32
V : 5V/div H : 20msec/div

CH4: K2029 (HD_PLL), IC2005 Pin 118
V : 3.3V/div H : 20msec/div



Synchronous Signal Processing Block 2

(INPUT4 PC signal VESA:

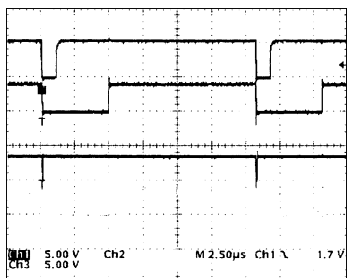
1280x1024@60Hz (SXGA@60Hz)

when there is signal input [separate H, V]

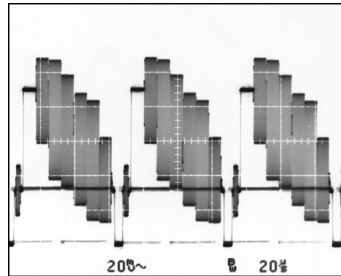
CH1: K2021 (HD_FIL), IC2005 Pin 107
V : 5V/div H : 2.5msec/div

CH2: K2029 (HD_PLL), IC2005 Pin 118
V : 3.3V/div H : 2.5msec/div

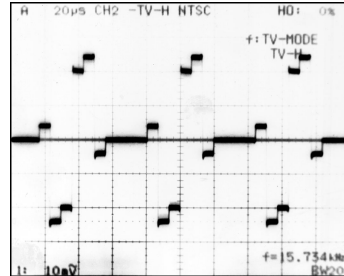
CH3: K2432 (DIVOUT), IC2402 Pin 103
V : 5V/div H : 2.5msec/div



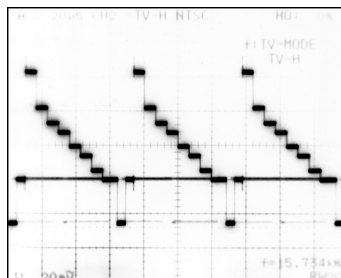
YC_VY
(INPUT1 NTSC Color Bar)
CN104 Pin1
V : 20mV/div H : 20msec/div



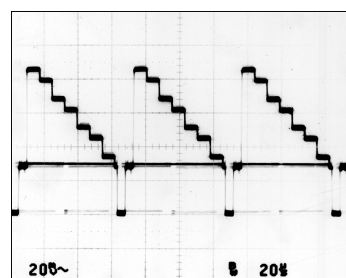
R output
(INPUT3, 4 NTSC Color Bar Y/Cb/Cr)
IC306
V : 10mV/div H : 20msec/div



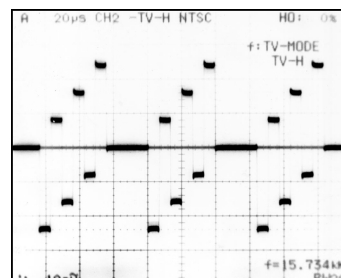
G output
(INPUT3, 4 NTSC Color Bar Y/Cb/Cr)
IC306
V : 20mV/div H : 20msec/div



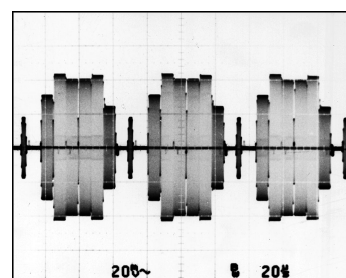
Y input
(INPUT1 NTSC Color Bar)
IC1201
V : 20mV/div H : 20msec/div

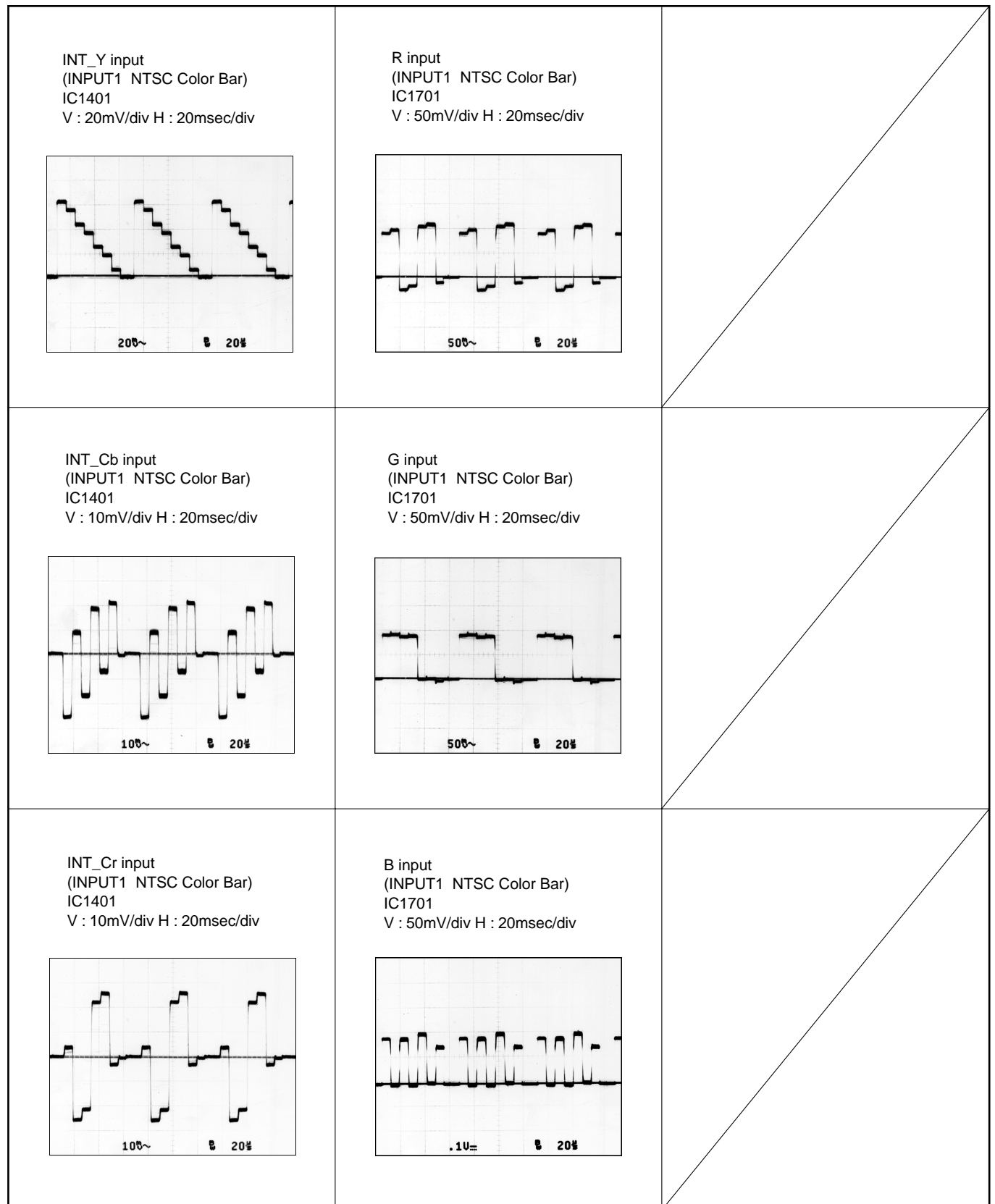


B output
(INPUT3, 4 NTSC Color Bar Y/Cb/Cr)
IC306
V : 10mV/div H : 20msec/div



C input
(INPUT1 NTSC Color Bar)
IC1201
V : 20mV/div H : 20msec/div





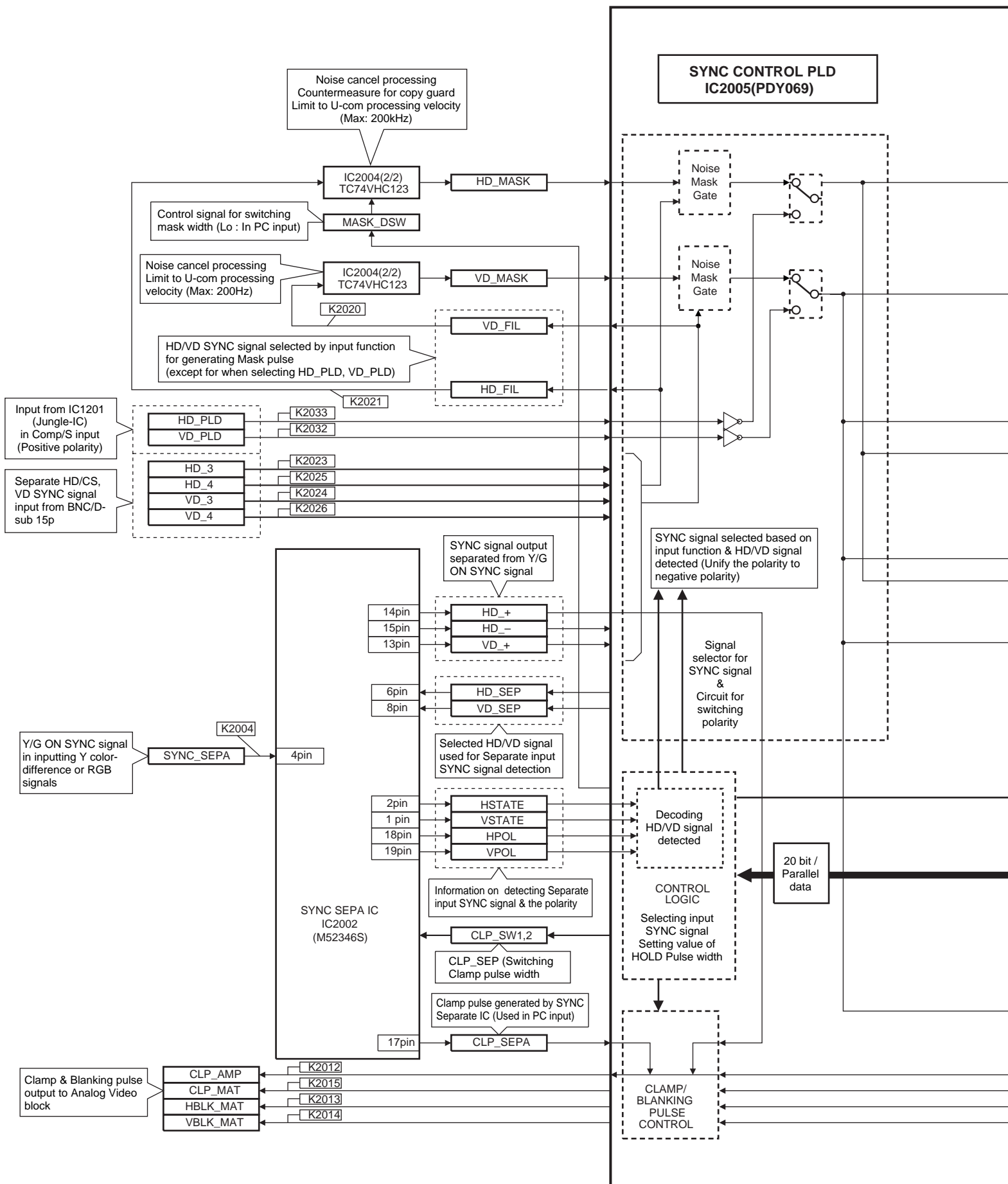
3.4 SYNC SIGNAL PROCESSING BLOCK

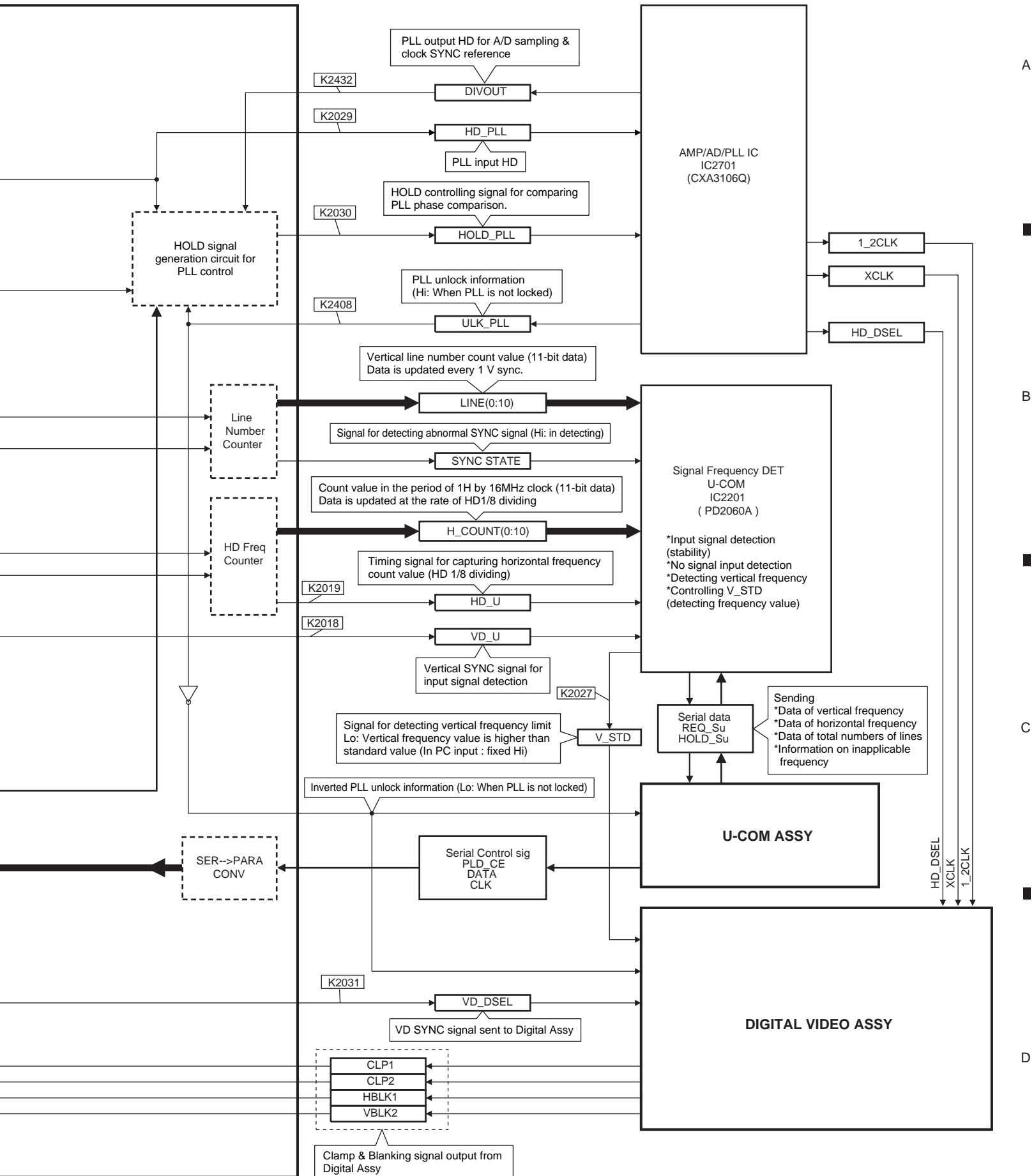
A

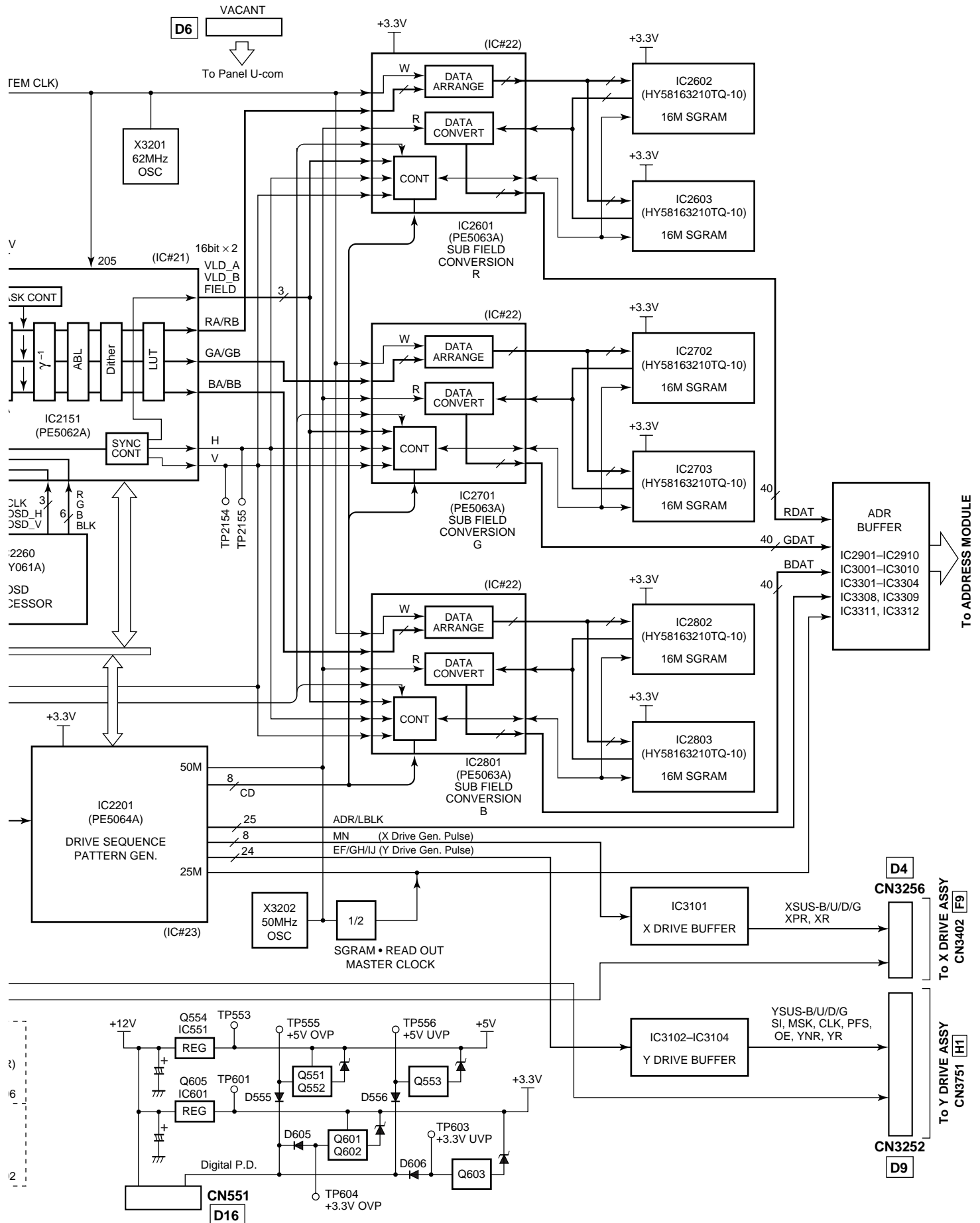
B

C

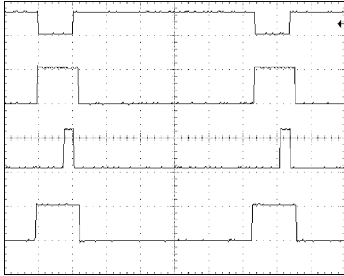
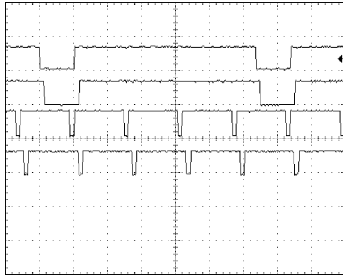
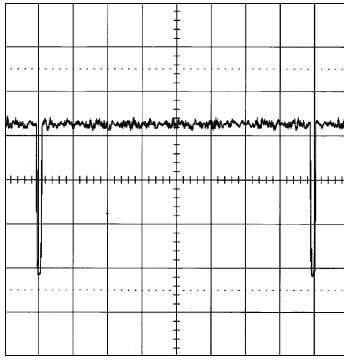
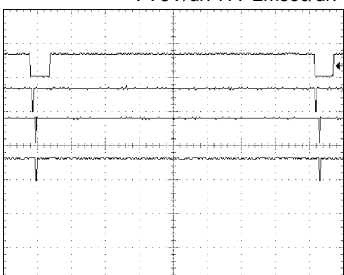
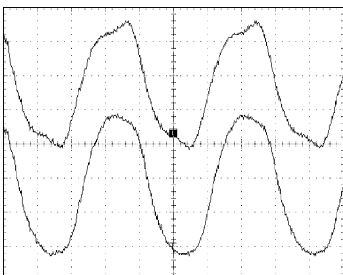
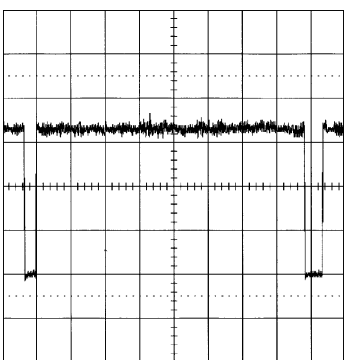
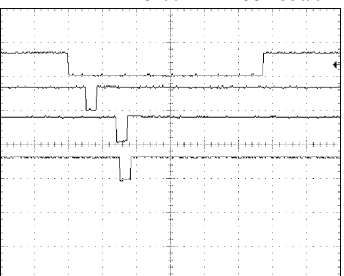
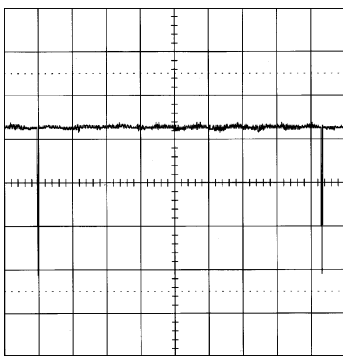
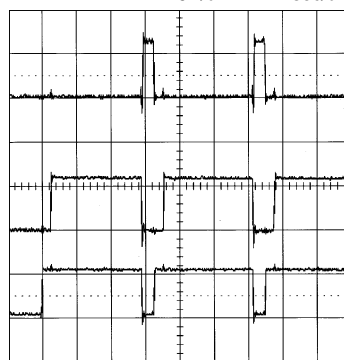
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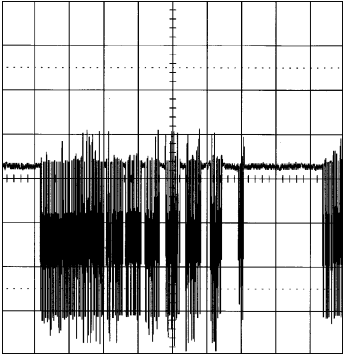
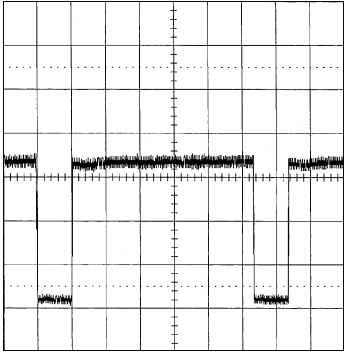
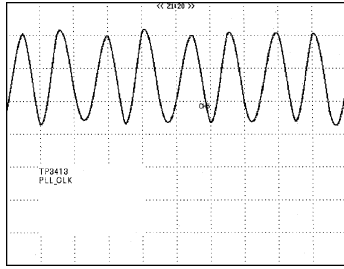
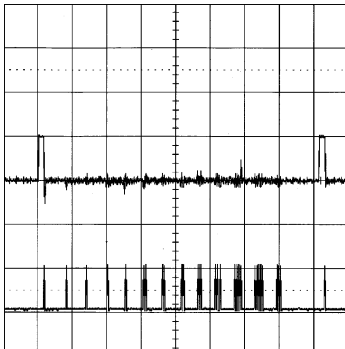
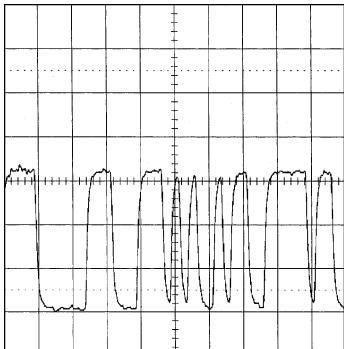
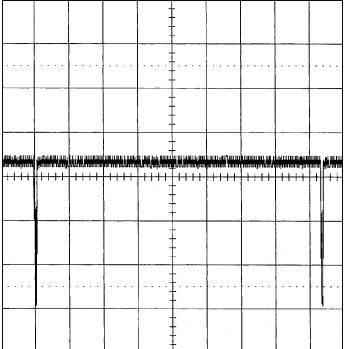
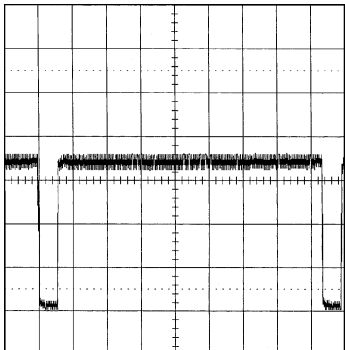
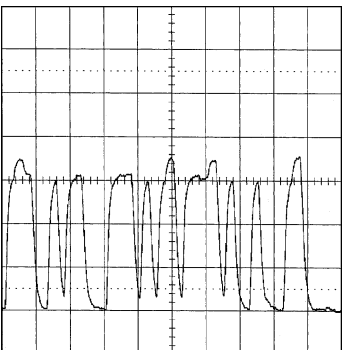
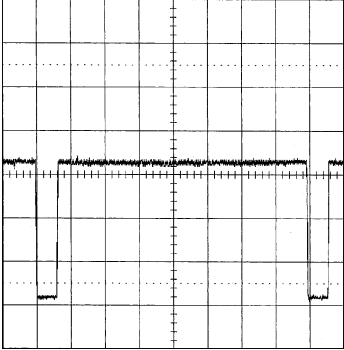






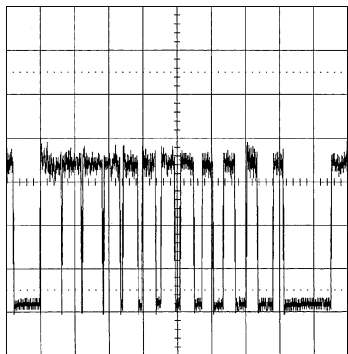
Waveforms of DIGITAL VIDEO ASSY

<p>Blanking waveform for analog use</p> <p>CH1: TP3410 (HDIP)</p> <p>CH2: TP3405 (CLP1)</p> <p>CH3: TP3406 (CLP2)</p> <p>CH4: TP3407 (HBLK1)</p> <p>V : 5V/div H : 10msec/div</p> 	<p>I-P H synchronous waveform</p> <p>CH1: TP3410 (HD_IP)</p> <p>CH2: IC1801 Pin 168 (Hi) — IC1901 Pin 57</p> <p>CH3: IC1901 Pin 55 (Hp) — IC1801 Pin 170</p> <p>CH4: IC1801 Pin 98 (HD_102)</p> <p>V : 5V/div H : 10msec/div</p> 	<p>H synchronous waveform</p> <p>TP2155</p> <p>V : 1V/div H : 2msec/div</p> 
<p>I-P V synchronous waveform</p> <p>CH1: TP3411 (VD_IP)</p> <p>CH2: IC1801 Pin 167 (Vi) — IC1901 Pin 58</p> <p>CH3: IC1901 Pin 56 (Vp) — IC1801 Pin 169</p> <p>CH4: IC1801 Pin 97 (VD_102)</p> <p>V : 5V/div H : 2msec/div</p> 	<p>I-P clock waveform</p> <p>CH1: IC1801 Pin 3 (CLK_102)</p> <p>CH2: IC1901 Pin 239 (CLK_101)</p> <p>V : 1V/div H : 5nsec/div</p> 	<p>STOP B waveform</p> <p>TP2205</p> <p>V : 1V/div H : 2msec/div</p> 
<p>I-P V synchronous waveform (enlarged)</p> <p>CH1: TP3411 (VD_IP)</p> <p>CH2: IC1801 Pin 167 (Vi) — IC1901 Pin 58</p> <p>CH3: IC1901 Pin 56 (Vp) — IC1801 Pin 169</p> <p>CH4: IC1801 Pin 97 (VD_102)</p> <p>V : 5V/div H : 200msec/div</p> 	<p>V synchronous waveform</p> <p>TP2154</p> <p>V : 1V/div H : 2msec/div</p> 	<p>ADR resonant control signal waveform</p> <p>CH1: IC3303 Pin11 (ADR_U)</p> <p>CH2: IC3303 Pin12 (ADR_B)</p> <p>CH3: IC3303 Pin13 (ADR_D)</p> <p>V : 5V/div H : 1msec/div</p> 

<p>Address resonant output waveform</p> <p>IC2910 Pin 13 V : 1V/div H : 2msec/div</p> 	<p>IC1801 HD input waveform</p> <p>CN3404 Pin 29 (HD_IP), TP3410 V : 1V/div H : 10msec/div</p> 	<p>IC1901 clock input waveform</p> <p>CN3404 Pin 26 (CLK_101), TP3413 V : 1V/div H : 20nsec/div</p> 
<p>X drive waveform</p> <p>CH1: IC3101 Pin 12 (XSUS_U) CH2: IC3101 Pin 15 (XPR_U) V : 0.5V/div H : 2msec/div</p> 	<p>GA input waveform</p> <p>IC1801 Pin 31 (GA_IP (O)) V : 1V/div H : 0.1msec/div</p> 	<p>VD input waveform</p> <p>IC2101 Pin 236 (VD_102), TP2102 V : 1V/div H : 2msec/div</p> 
<p>IC1801 VD input waveform</p> <p>CN3404 Pin 30 (VD_IP), TP3411 V : 1V/div H : 2msec/div</p> 	<p>GA output waveform</p> <p>IC1801 Pin 121 (GA_102 (O)) V : 1V/div H : 0.1msec/div</p> 	<p>HD input waveform</p> <p>IC2101 Pin 235 (HD_102), TP2103 V : 1V/div H : 2msec/div</p> 

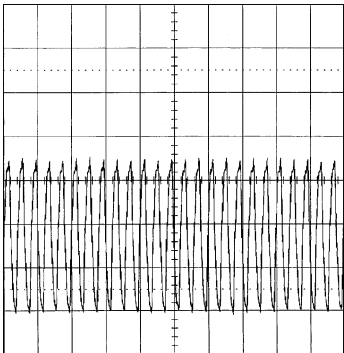
Address control signal

IC3304 Pin 11 (LCLK)
V : 1V/div H : 2msec/div



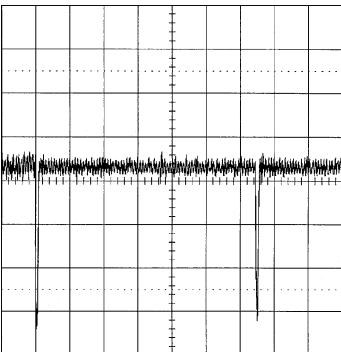
Address control signal

IC3308 Pin 15 (CLKDUI)
V : 1V/div H : 0.1msec/div

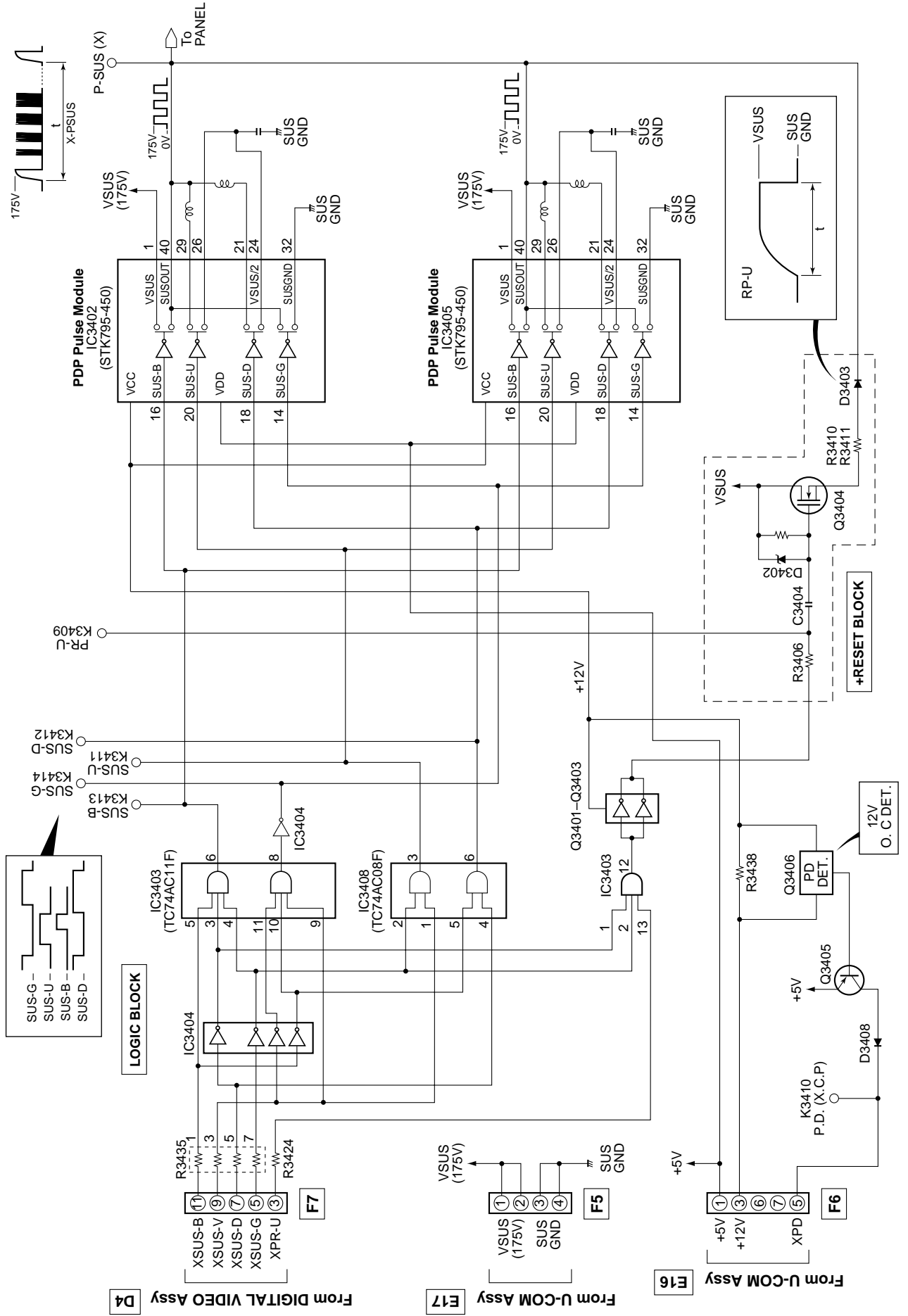


Address control signal

CN3275 Pin 26 (LEDUI)
V : 1V/div H : 0.5msec/div



3.6 X DRIVE ASSY SECTION



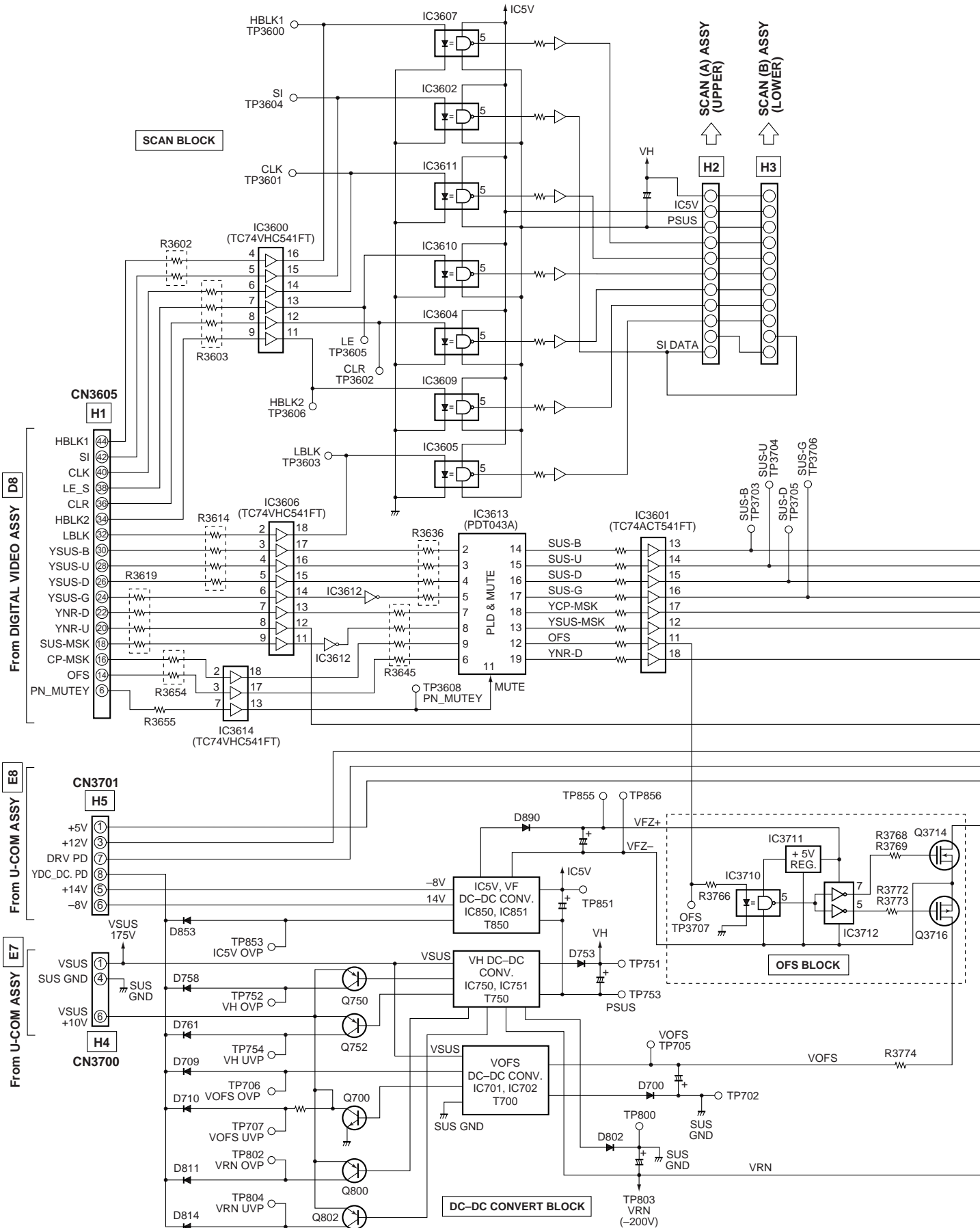
3.7 Y DRIVE ASSY SECTION

A

B

C

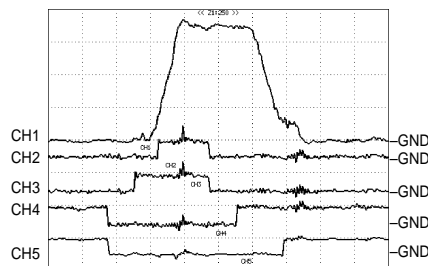
D



Waveforms of X DRIVE Assy, Y DRIVE Assy and SCAN MODULE

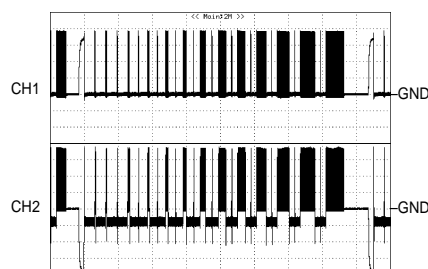
Sustained waveform

CH1: P.SUS TP3716 (P.SUS) – TP3713 (SUS.GND)
V: 50V/div., H: 500nsec/div.
CH2: YSUS-B TP3703 (YSUS-B) – TP3609 (D.GND)
V: 10V/div., H: 500nsec/div.
CH3: YSUS-U TP3704 (YSUS_U) – TP3609 (D.GND)
V: 10V/div., H: 500nsec/div.
CH4: YSUS-D TP3705 (YSUS_D) – TP3609 (D.GND)
V: 10V/div., H: 500nsec/div.
CH5: YSUS-G TP3706 (YSUS-G) – TP3609 (D.GND)
V: 10V/div., H: 500nsec/div.



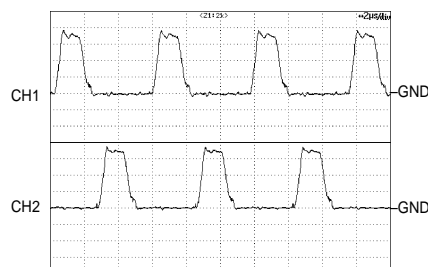
Sustained waveform (1 field)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 2msec/div.
CH2: Y drive waveform
TP3716 (P. SUS) – TP3713 (SUS. GND)
V: 50V/div., H: 2msec/div.



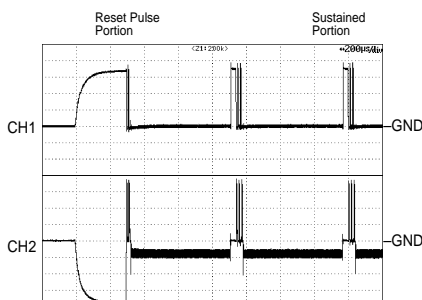
Sustained waveform (1 field; enlarged)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 2μsec/div.
CH2: Y drive waveform
TP3716 (P. SUS) – TP3713 (SUS. GND)
V: 50V/div., H: 2μsec/div.



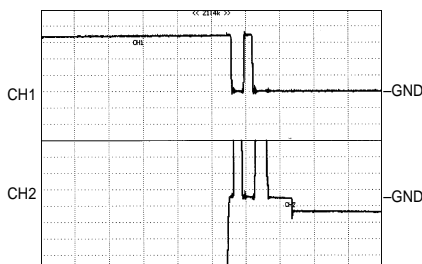
Sustained waveform (1st sub-field)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 200μsec/div.
CH2: Y drive waveform
TP3716 (P.SUS) – TP3713 (SUS.GND)
V: 50V/div., H: 200μsec/div.



Sustained waveform (reset pulse portion; enlarged)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 20μsec/div.
CH2: Y drive waveform
TP3716 (P. SUS) – TP3713 (SUS. GND)
V: 50V/div., H: 20μsec/div.



Sustained waveform (portion where sustaining was started; enlarged)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 5μsec/div.
CH2: Y drive waveform
TP3716 (P. SUS) – TP3713 (SUS. GND)
V: 50V/div., H: 5μsec/div.



Sustained waveform

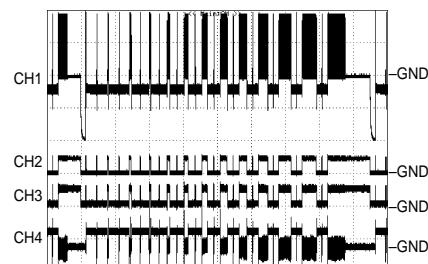
(portion where sustaining was ended; enlarged)

CH1: X drive waveform
K3402 (P. SUS) – K3404 (SUS. GND)
V: 50V/div., H: 5μsec/div.
CH2: Y drive waveform
TP3716 (P. SUS) – TP3713 (SUS. GND)
V: 50V/div., H: 5μsec/div.



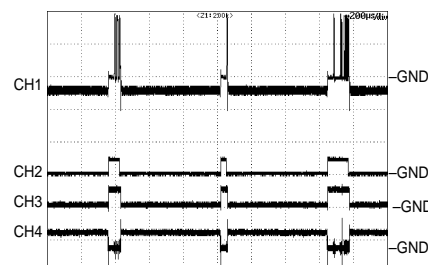
Control waveforms for additional pulses (1 field)

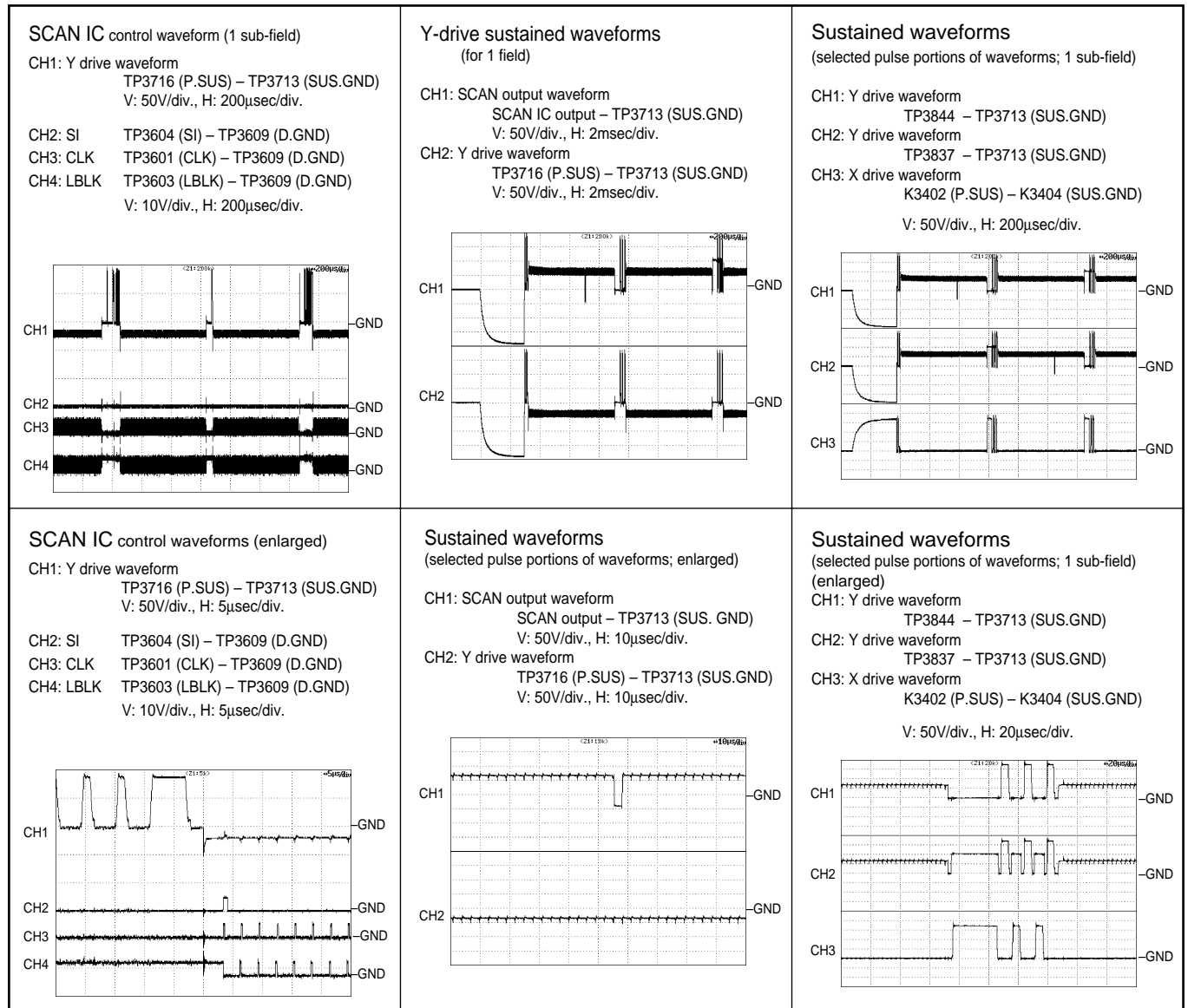
CH1: Y drive waveform
TP3716 (P.SUS) – TP3713 (SUS.GND)
V: 100V/div., H: 2msec/div.
CH2: CP_MSK
IC3601 Pin17 (CP_MSK) – TP3609 (D.GND)
V: 10V/div., H: 2msec/div.
CH3: SUS_MSK
IC3601 Pin12 (YSUS_MSK) – TP3609 (D.GND)
V: 10V/div., H: 2msec/div.
CH4: OFS TP3707 (OFS) – TP3609 (D.GND)
V: 10V/div., H: 2msec/div.



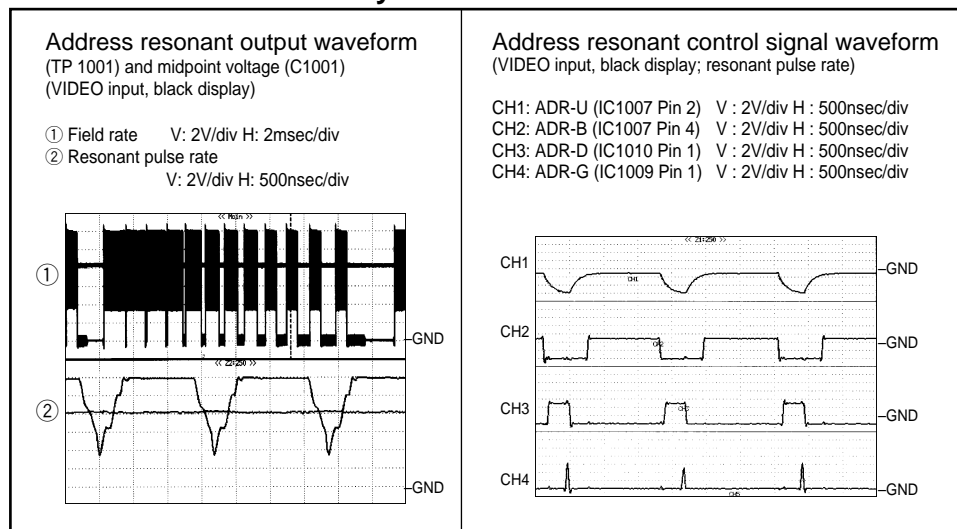
Control waveforms for additional pulses (1 sub-field; enlarged)

CH1: Y drive waveform
TP3716 (P.SUS) – TP3713 (SUS.GND)
V: 50V/div., H: 200μsec/div.
CH2: CP_MSK
IC3601 Pin17 (CP_MSK) – TP3609 (D.GND)
V: 10V/div., H: 200μsec/div.
CH3: SUS_MSK
IC3601 Pin12 (YSUS_MSK) – TP3609 (D.GND)
V: 10V/div., H: 200μsec/div.
CH4: OFS TP3707 (OFS) – TP3609 (D.GND)
V: 10V/div., H: 200μsec/div.

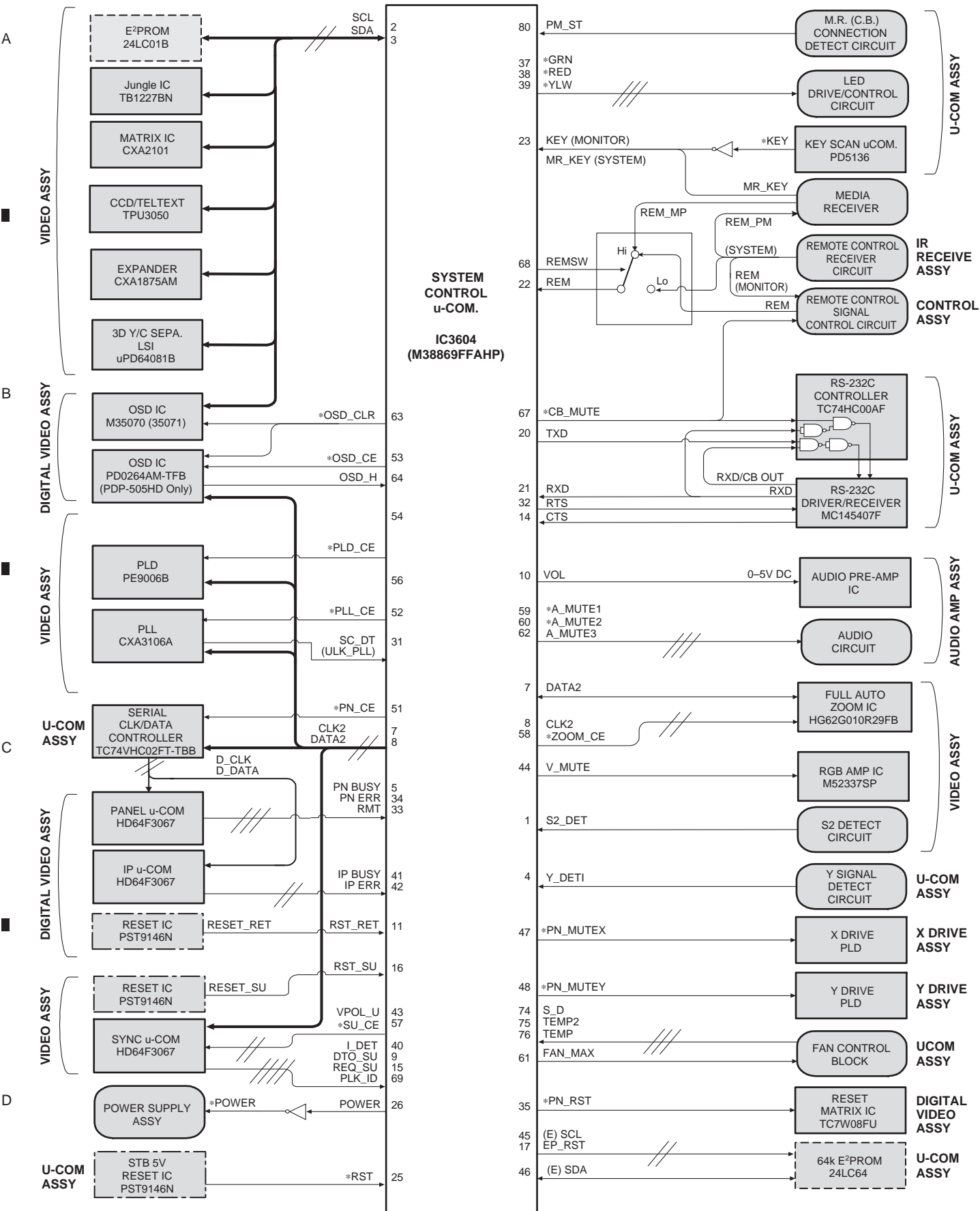




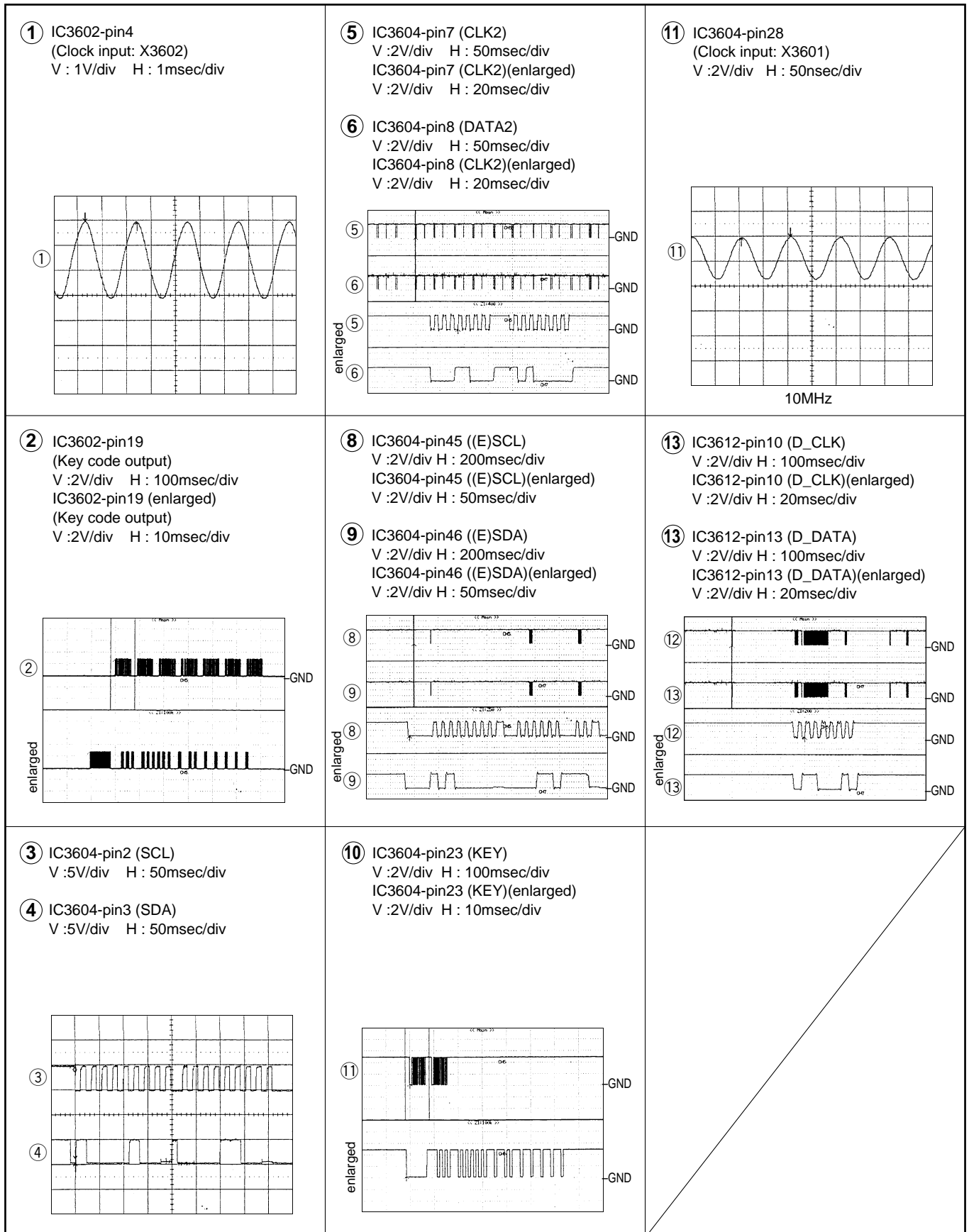
Waveforms of CABLE Assy



3.8 U-COM ASSY SECTION



Waveforms of U-COM ASSY



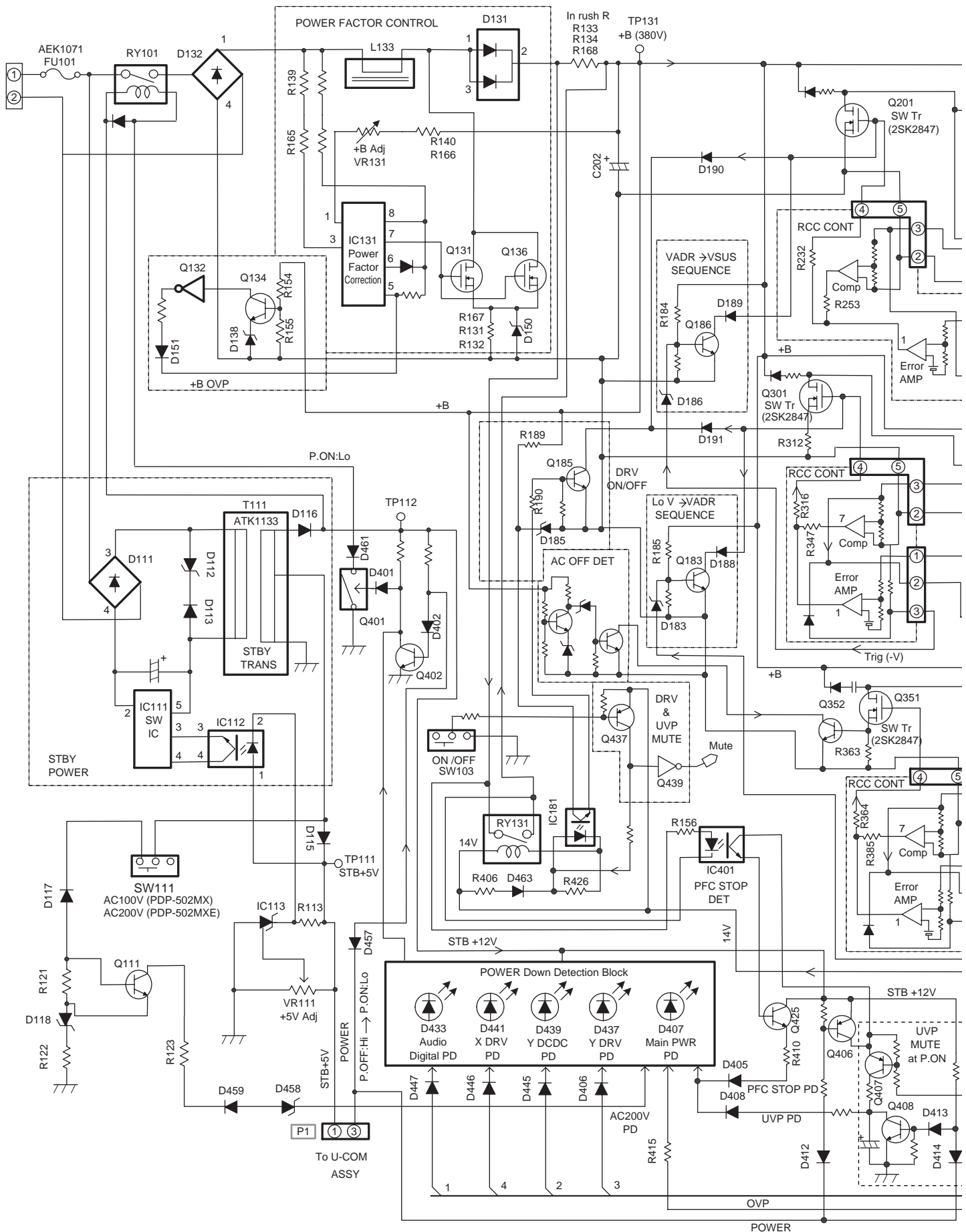
PDP-502MX, PDP-502MXE

● Pin Function

Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
1	S2_DET	S2 Signal detection	0–1.3V: Normal, 1.4–2.4V: Letter Box, 2.5–5V: Squeeze	I	○	—	○
	OPTION	Option Video Box detection	High: non existence, Low: existence of Video Box	I	—	○	—
2	SCL	I ² C-BUS Clock	0–5V clock signal: always communicating when power on	O	○	○	○
3	SDA	I ² C-BUS Data	0–5V clock signal: always communicating when power on	I/O	○	○	○
4	V_DETI	Result of Y signal detection	High: Y Signal detected, Low: Y Signal not detected	I	○	○	○
5	PN_BUSY	BUSY signal from Panel U-Com	High: In exchanging input functions, Low: Normal	I	○	○	○
6	—	No allocation(not used)					
7	CLK2	Clock output for Serial 3 lines	0–5V clock signal: always communicating when power on	O	○	○	○
8	DATA2	Data output for Serial 3 lines	0–5V serial signal: always communicating when power on (both-way communication with Full Auto Zoom IC)	O	○	○	○
9	DTO_SU	Serial data input from SYNC u-com	High: Normal, 0–5V serial signal: During communication	I	○	○	○
10	VOL	Audio volume output	PWM output	O	○	○	—
11	RST RET	Reset Signal from Digital Video Assy (Panel u-com and IP u-com)	High: Normal, Low: In Reset	I	○	○	○
12	—	No allocation (not used)					
13	—	No allocation (not used)					
14	CTS	Not used					
15	REQ_SU	Request to read detected frequency from SYNC u-com	High: Normal, Low: In requesting	I	○	○	○
16	RST_SU	Reset Signal from SYNC u-com	High: Normal, Low: In resetting	I	○	○	○
17	EP_RST	Reset output to E ² PROM	High: In resetting, Low: Normal	O	○	○	○
18	BUSY2	Not used					
19	SCL2	Not used					
20	TXD	RS-232C sending data	0–5V serial signal	O	○	○	○
21	RXD	RS-232C receiving data	0–5V serial signal	I	○	○	○
22	REM	Remote Control unit signal input	High: Normal, 0–5V serial signal: In input from Remote Control unit	I	○	○	○
23	KEY	Key Matrix, Key of the unit input	High: Normal, 0–5V serial signal: In Key input	I	○	○	○
24	CNVSS	Controlling operation mode of u-com of the unit	Low: Normal	I	○	○	○
25	*RST	Reset input	High: Normal, Low: In Reset	I	○	○	○
26	POWER	Power on/off	High: When power on, Low: In Stand-by	O	○	○	○
27	—	No allocation (not used)					
28	X_IN	Clock input	10 MHz sine wave	I	○	○	○
29	X_OUT	Clock output	10 MHz sine wave	O	○	○	○
30	VSS	Power supply terminal	STB GND	I	○	○	○
31	SC_DT (ULK_PLL)	Detecting SYNC Signal output from Analog Assy to Digital Assy	High: existence of Sync signal, Low: non existence	I	○	○	○
32	RTS	Not used					
33	RMT	Signal of request to quit sending commands from Panel u-com	Low: Normal	I	○	○	○
34	PN_ERR	Communication error signal from Panel u-com	Low: Normal	I	○	○	○
35	*PN_RST	Reset signal output to Panel u-com & IP u-com	High: Normal, Low: In Reset	O	○	○	○
36	—	No allocation (not used)					
37	*GRN	Green LED lighting	Low: In lighting Green LED	O	○	○	○
38	*RED	Red LED lighting	Low: In lighting Red LED	O	○	○	○

Pin No.	Name	Function	Operation of Terminals (during power on)	I/O	PDP-502MX	PDP-502MXE	PDP-505HD
39	*YLW	Yellow LED lighting	Low: In lighting Yellow LED	O	○	○	○
40	I_DET	Not used					
41	IP_BUSY	BUSY signal from IP u-com	High: At the timing of VD SYNC	I	○	○	○
42	IP_ERR	Communication error signal from IP u-com	Low: Normal	I	○	○	○
43	VPOL_U	Not used					
44	V_MUTE	Analog video mute output	High: When muting, Low: Normal	O	○	○	○
45	(E) SCL	I ² C-BUS Clock for E ² PROM	High: Normal, 0–5V clock signal: During communication	I/O	○	○	○
46	(E) SDA	I ² C-BUS Data for E ² PROM	High: Normal, 0–5V serial signal: During communication	I/O	○	○	○
47	*PN_MUTEX	X Drive Panel mute output	High: Normal, Low: When muting	O	○	○	○
48	*PN_MUTEY	Y Drive Panel mute output	Fixed "High"	O	○	○	○
49	*V_STDO	Not used					
50	STDSW	Not used					
51	*PN_CE	Chip Enable for Panel u-com & IP u-com	High: Normal, Low: During communication	O	○	○	○
52	*PLL_CE	Chip Enable for PLL IC	High: Normal, Low: During communication (Approx.80ms interval)	O	○	○	○
53	*OSD_CE	Chip Enable for OSD IC	High: Normal, Low: During communication	O	—	—	○
54	HPOL_U	Not used					
55	PGM_OE	Not used					
56	*PLD_CE	Chip Enable for PLD (Analog Video Assy)	High: Normal, Low: During communication (Approx.80ms interval)	O	○	○	○
57	*SU_CE	Chip Enable for SYNC u-com	High: Normal, Low: During communication	O	○	○	○
58	*ZOOM_CE	Chip Enable for Full Auto Zoom IC	High: Normal, Low: During communication	O	—	—	○
59	*A_MUTE1	Audio Mute 1	High: Normal, Low: When muting	O	○	○	—
60	*A_MUTE2	Audio Mute 2 Muting audio out	High: Normal, Low: When muting	O	○	○	—
61	FAN_MAX	Command to rotate Fan with max. speed	High: In setting Fan max. speed, Low: Normal	O	○	○	○
62	A_MUTE3	Audio Mute 3 Mute in suspending	High: When muting, Low: Normal	O	○	○	—
63	*OSD_CLR	Reset signal output to OSD IC	High: Normal, Low: In resetting	O	○	○	—
64	OSD_H	OSD Timing Pulse for SYNC processing	Pulse input	I	—	—	○
65	——	No allocation (Not used)					
66	DRV_OFF	Not used					
67	*CB_MUTE	Combination Mute	High: When ID is set, Low: Normal	O	○	○	—
68	REMSW	Not used					
69	PLK_ID	Not used					
70	——	No allocation (not used)					
71	VCC	Power source input	STB +5V	I	○	○	○
72	VREF	Reference voltage input of AD/DA Converters	STB +5V	I	○	○	○
73	AVSS	Analog power input of AD/DA Converters	STBGND	I	○	○	○
74	S_D	Shut down detection for high temperature	High: In high temperature, Low: Normal	I	○	○	○
75	TEMP2	Not used					
76	TEMP	Temperature detection for On screen bar display	0–5V DC value	I	○	○	○
77	——	No allocation (Not used)					
78	——	No allocation (Not used)					
79	——	No allocation (Not used)					
80	PM_ST	Not used					

3.9 MAIN POWER ASSY SECTION





To ANALOG VIDEO ASSY

To UCOM ASSY

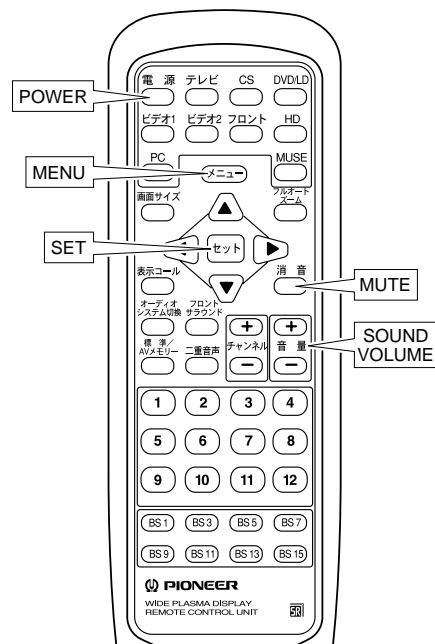
C

D

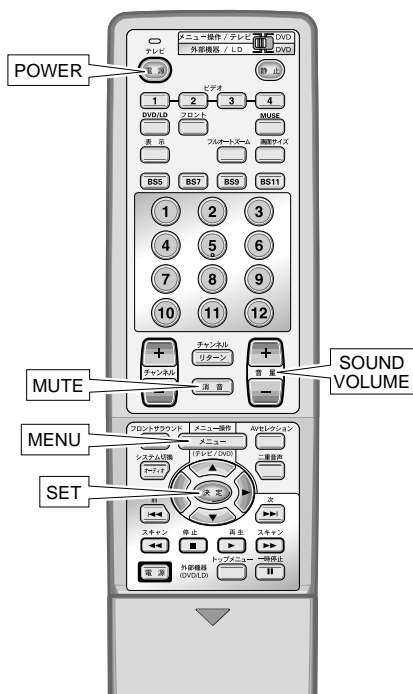
6. ADJUSTMENT

■ SERVICE FACTORY MODE

Perform the operations of Service factory mode using the remote control unit provided with the PDP-501HD (CU-PD001: AXD1432) or the remote control unit provided with the PDP-502HD (CU-PDP009: AXD1673).

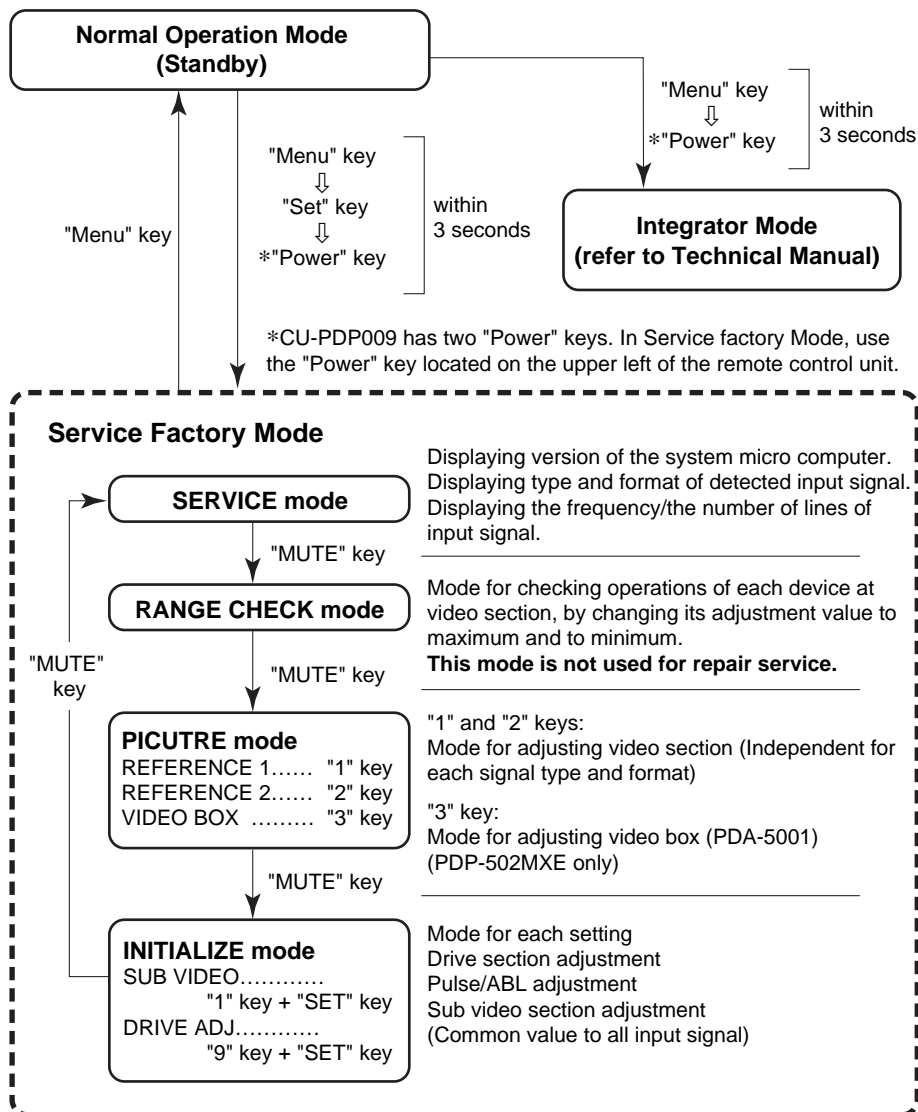


CU-PDP001
(AXD1432)



CU-PDP009
(AXD1673)

■ Entering Service Factory Mode

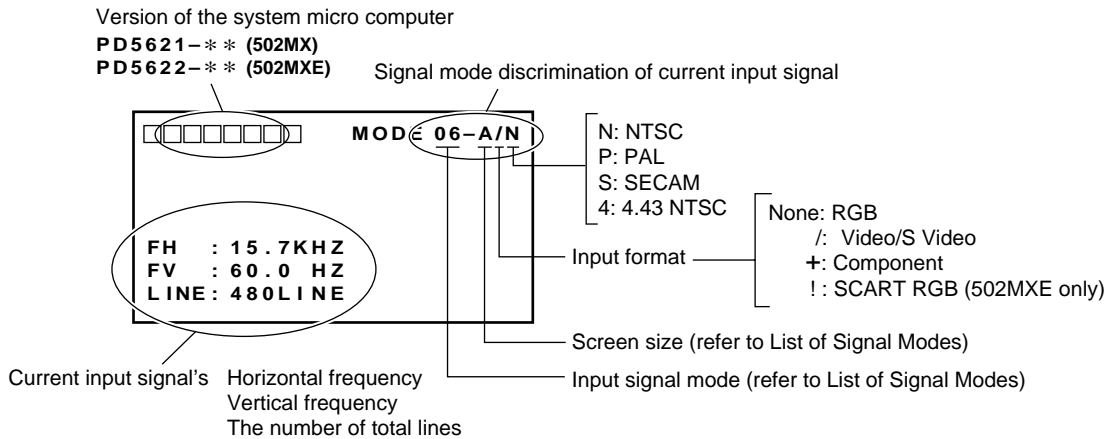


- In each adjustment mode, adjusted values can be changed with +/- of "SOUND VOLUME" key on the remote control unit.
- After adjustment, adjusted values can be fixed by pressing "SET" key.

Note)

- When an input signal mode is changed, the adjustment mode is set to Normal operation mode automatically.
- SETTING (PC/VIDEO) and SIGNAL (RGB/COMPONENT) can not be changed in the service factory mode.
- When entering Service factory mode, all items of PICTURE adjustment in Normal menu/Integrator mode and all items of SCREEN menu (such as position adj.), except for CLK Phase, are reset to their initial value.

SERVICE MODE



List of Signal Modes

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
50.0	15.625K	PAL	—	01-6	984 * 768	4:3 NORMAL	01-6 – 01-A : RGB
		SECAM	—	01-7	1280 * 768	FULL	01-6+ – 01-A+: Y color-difference
		PAL-N (502MX only)	—	01-8	↑	ZOOM	06-6/ – 06-A/: Video/S Video
		NTSC-50	—	01-9	↑	CINEMA WIDE	01-6! – 01-A!: SCART RGB (502MXE only)
		SCART RGB (50Hz) (502MXE only)	—	01-A	↑	NATURAL WIDE	
	31.3K	Double-speed PAL	—	02-6	984 * 768	4:3 NORMAL	02-6 – 02-A: RGB
			—	02-7	1280 * 768	FULL	02-6+ – 02-A+: Y color-difference
			—	02-8	↑	ZOOM	
			—	02-9	↑	CINEMA WIDE	
			—	02-A	↑	NATURAL WIDE	
56.0	24.8K	640 * 400 (PC-98)	03-2	—	1280 * 768	FULL	FULL display only
	35.2K	800 * 600 (SVGA 56Hz)	04-0	—	800 * 600	ORIGINAL	(VESA: 35.156k/56.250)
			04-1	—	1024 * 768	4:3 NORMAL	
			04-2	—	1280 * 768	FULL	
	45.1K	1280 * 768 (WIDE-XGA)	05-2	—	1280 * 768	ORIGINAL	Exclusive video card No 4:3 squeeze display
60.0	15.734K	NTSC	—	06-6	984 * 768	4:3 NORMAL	06-6 – 06-A: RGB
		4.43NTSC	—	06-7	1280 * 768	FULL	06-6+ – 06-A+: Y color-difference
		PAL-M (502MX only)	—	06-8	↑	ZOOM	06-6/ – 06-A/: Video/S Video
		PAL-60	—	06-9	↑	CINEMA WIDE	06-6! – 06-A!: SCART RGB (502MXE only)
		SECAM-60	—	06-A	↑	NATURAL WIDE	
	31.5K 32.0K	SCART RGB (60Hz) (502MXE only)					
		SDTV16:9 (704 * 480 i)					
		SDTV 4:3 (704 * 480 i)					
		SDTV 4:3 (640 * 480 i)					
		640 * 480 (VGA)	07-0	—	640 * 480	ORIGINAL	PC setting
		852 * 480 (WIDE-VGA)	07-1	—	1024 * 768	4:3NORMAL	(VESA: 31.469k/59.940)
		864 * 480 (WIDE-VGA)	07-2	—	1280 * 768	FULL	
		Double-speed NTSC	—	07-6	984 * 768	4:3NORMAL	
		SDTV16:9 (704 * 480 p)	—	07-7	1280 * 768	FULL	VIDEO setting
		SDTV 4:3 (704 * 480 p)	—	07-8	↑	ZOOM	07-6 – 07-A: RGB
		SDTV 4:3 (640 * 480 p)	—	07-9	↑	CINEMA WIDE	07-6+ – 07-A+: Y color-difference
			—	07-A	↑	NATURAL WIDE	

PDP-502MX, PDP-502MXE

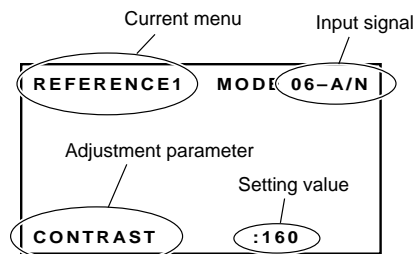
Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
60.0	33.8K	Hi-Vision INTERLACE (1035 i) HDTV16:9 (1920 * 1080 i) Hi-Vision INTERLACE (1080 i)	—	08-7	1280 * 768	FULL (HD)	08-7+: Y color-difference 08-7: RGB
			—	09-7			
	37.9K 38.0K	800 * 600 (SVGA) 1072 * 600 (WIDE-SVGA)	0A-0	—	800 * 600	ORIGINAL	(VESA: 37.879k/60.317)
			0A-1	—	1024 * 768	4:3NORMAL	
			0A-2	—	1280 * 768	FULL	
	45.0K	HDTV16:9 (1280 * 720 p)	—	0B-7	1280 * 768	FULL (HD)	0B-7+: Y color-difference 0B-7: RGB
	48.4K 48.4K 48.0K	1024 * 768 (XGA) 1280 * 768 1376 * 768 (WIDE-XGA)	0C-1	—	1024 * 768	ORIGINAL	(VESA: 48.363k/60.004) No 4:3 squeeze display Switches by the menu
			0C-2	—	1280 * 768	ORIGINAL	
			0C-2	—	1280 * 768	FULL	
	53.7K	1152 * 864	0D-1	—	1024 * 768	4:3 (TYPE)	
			0D-2	—	1280 * 768	FULL (TYPE)	
	60.0K	1280 * 960	0E-1	—	1024 * 768	4:3 (TYPE)	(VESA: 60.000k/60.000)
			0E-2	—	1280 * 768	FULL (TYPE)	
	64.0K 64.3K 64.6K	1280 * 1024 (SXGA)	0F-1	—	960 * 768	4:3 (TYPE)	(VESA: 63.981k/60.020) Trimming display
			0F-2	—	1280 * 768	FULL (TYPE)	
			0F-3	—	1280 * 768	ZOOM	
	67.5K HDTV16:9 (1920 * 1080 p) 75.0K	Hi-Vision PROGRESSIVE (1035 p) HDTV16:9 (1920 * 1080 p) 1600 * 1200 (UXGA)	—	10-7	1280 * 768	FULL (HD)	10-7+: Y color-difference 10-7: RGB (VESA: 75.000k/60.000)
65.0	81.3K	1600 * 1200 (UXGA)	12-1	—	1024 * 768	4:3 (TYPE)	(VESA: 81.250k/65.000)
66.7	35.0K	640 * 480 (Macintosh 13)	14-0	—	640 * 480	ORIGINAL	
			14-1	—	1024 * 768	4:3 NORMAL	
			14-2	—	1280 * 768	FULL	
	62.0K	1152 * 900 (SUN LO)	13-1	—	1024 * 768	4:3 (TYPE)	Mode for SUN (UNIX)
			13-2	—	1280 * 768	FULL (TYPE)	
70.1	31.5K	640 * 400 (PC-H98)	15-2	—	1280 * 768	FULL	720 * 400 can be displayed (Data amount drops)
	56.5K	1024 * 768 (XGA)	16-1	—	1024 * 768	ORIGINAL	(VESA: 56.476k/70.069)
			16-2	—	1280 * 768	FULL	
72.0	37.9K	640 * 480 (VGA)	18-0	—	640 * 480	ORIGINAL	(VESA: 37.861k/72.809)
			18-1	—	1024 * 768	4:3 NORMAL	
			18-2	—	1280 * 768	FULL	
	48.1K	800 * 600 (SVGA)	19-0	—	800 * 600	ORIGINAL	(VESA: 48.077k/72.188)
			19-1	—	1024 * 768	4:3 NORMAL	
			19-2	—	1280 * 768	FULL	
	64.9K	1152 * 864	1A-1	—	1024 * 768	4:3 (TYPE)	
			1A-2	—	1280 * 768	FULL (TYPE)	
75.0 (74.6)	37.5K	640 * 480 (VGA)	1C-0	—	640 * 480	ORIGINAL	(VESA: 37.500k/75.000)
			1C-1	—	1024 * 768	4:3 NORMAL	
			1C-2	—	1280 * 768	FULL	
	46.9K	800 * 600 (SVGA)	1D-0	—	800 * 600	ORIGINAL	(VESA: 46.875k/75.000)
			1D-1	—	1024 * 768	4:3 NORMAL	
			1D-2	—	1280 * 768	FULL	
	49.7K	832 * 624 (Macintosh 16)	1E-0	—	832 * 624	ORIGINAL	4:3/FULL → Top & bottom are masked
			1E-1	—	1024 * 748	4:3 NORMAL	
			1E-2	—	1280 * 748	FULL	

Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (Hz)	Input Signal Dot * Line	Signal Mode		Panel Display Dot * Line	OSD	Remarks
			PC	VIDEO			
75.0 (74.9) (75.1) (76.1)	60.0K	1024 * 768 (XGA)	1F-1	—	1024 * 768	ORIGINAL	(VESA: 60.023k/75.029)
	60.2K	1024*768 (Macintosh 19)	1F-2	—	1280 * 768	FULL	74.9/60.2K.....MAC
	67.7K	1152 * 864	20-1	—	1024 * 768	4:3 (TYPE)	(VESA: 67.500k/75.000)
			20-2	—	1280 * 768	FULL (TYPE)	
	68.7K	1152 * 870 (Macintosh 21)	21-1	—	1024 * 768	4:3 (TYPE)	
			21-2	—	1280 * 768	FULL (TYPE)	
	71.7K	1152 * 900 (SUN HI)	2A-1	—	1024 * 768	4:3 (TYPE)	
			2A-2	—	1280 * 768	FULL (TYPE)	
	80.0K	1280 * 1024 (SXGA)	22-1	—	960 * 768	4:3 (TYPE)	(VESA: 79.976k/75.025)
	81.0K	1600 * 1024 (WIDE-SXGA)					
85.0	43.3K	640 * 480 (VGA)	23-0	—	640 * 480	ORIGINAL	(VESA: 43.269k/85.008)
			23-1	—	1024 * 768	4:3NORMAL	
			23-2	—	1280 * 768	FULL	
	53.7K	800 * 600 (SVGA)	24-0	—	800 * 600	ORIGINAL	(VESA: 53.674k/85.061) 4:3/FULL → Top & bottom are masked
			24-1	—	1024 * 720	4:3NORMAL	
			24-2	—	1280 * 720	FULL	
	68.7K	1024 * 768 (XGA)	25-1	—	1024 * 768	ORIGINAL	(VESA: 68.677k/84.997)
			25-2	—	1280 * 768	FULL	
	91.1K	1280 * 1024 (SXGA)	26-1	—	960 * 768	4:3 (TYPE)	(VESA: 91.146k/85.024)
87.0 INTERLACE	35.5K	1024 * 768 (XGA)	27-1	—	1024 * 768	ORIGINAL (TYPE)	(VESA: 35.522k/43.479 INTERLACED)
			27-2	—	1280 * 768	FULL (TYPE)	
	46.4K	1280 * 1024 (SXGA)	28-2	—	1280 * 768	FULL (TYPE)	

■ Items to adjust and set value in Each Adjustment mode

■ PICUTRE mode

- PICTURE mode has three menus, "REFERENCE 1", "REFERENCE 2" and "VIDEO BOX".
- Press "1" key on the remote control unit to enter "REFERENCE 1", press "2" key on the remote control unit to enter "REFERENCE 2" and press "3" key on the remote control unit to enter "VIDEO BOX". For "VIDEO BOX" mode, refer to the service manual ARP3038 for PDA-5001/ZYVLPK
- Do not operate keys that have no parameters applied to the current input signal mode.



● REFERENCE 1 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of U-COM ASSY

Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value												
			C. VIDEO/YC				SCART RGB		COMPONENT			RGB VIDEO			PC
			NTSC	PAL	SECAM	4.43NT	RGB60	RGB50	STD	× 2	HDTV	STD	× 2	HDTV	
1	CONTRAST	Contrast adjustment	Adjustment required												
2	BRIGHT	Brightness adjustment													
3	COLOR	Color adjustment	Adjustment required												
4	TINT	Tint adjustment (C.Video signal input only)													
5	H. SHARP	Horizontal sharpness setting (Video signal input)	128	140	140	128	128	140	113	128	128	128	128	—	
	H. ENHANCE	Horizontal sharpness setting (PC signal input)	—	—	—	—	—	—	—	—	—	—	—	128	
6	DETAIL	Detail setting	128	128	128	128	128	128	128	128	128	128	128	128	
7	R HIGH	White Balance adjustment	Adjustment required												
8	G HIGH														
9	B HIGH														
10	R LOW														
11	G LOW														
12	B LOW														
BS5	V. SHARP	Vertical sharpness setting (Video signal input)	128	140	140	128	128	140	113	128	128	128	128	—	
	V. ENHANCE	Vertical sharpness setting (PC signal input)	—	—	—	—	—	—	—	—	—	—	—	128	
BS9	ABL LEV OFFSET	ABL Level offset adjustment	Adjustment required (note 2)												
BS11	PLS NUM OFFSET	Pulse number offset adjustment	8	8	8	8	8	8	8	8	8	8	8	8	

SCART RGB: PDP-502MXE Only

● REFERENCE 2 mode

Adjustment mode independent of input signal format / Data stored in EEPROM of VIDEO ASSY

Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value												
			C. VIDEO/YC				SCART RGB		COMPONENT			RGB VIDEO			PC
			NTSC	PAL	SECAM	4.43NT	RGB60	RGB50	STD	×2	HDTV	STD	×2	HDTV	
1	R-Y/R	Matrix demodulation angle setting (Video signal input only)	6(10)	11(13)	11(13)	6(10)	10	13	6	6	6	6	6	6	—
2	R-Y/B		12(15)	14(15)	14(15)	12(15)	15	15	12	12	12	12	12	12	—
3	G-Y/R		7	9(10)	9(10)	7	10	10	7	7	10	7	7	10	—
4	G-Y/B		8	6(4)	6(4)	8	5	4	8	8	5	8	8	5	—
9	ENHANCER MAIN	Sharpness setting	0(0)	0(0)	0(0)	0(0)	0	0	0	0	0	0(0)	0(0)	0	—
10	ENHANCER V		0(0)	0(0)	0(0)	0(0)	0	0	0	0	0	0(0)	0(0)	0	—
11	ENHANCER M		0(0)	0(0)	0(0)	0(0)	0	0	0	0	0	0(0)	0(0)	0	—
12	ENHANCER H		0(0)	0(0)	0(0)	0(0)	0	0	0	0	0	0(0)	0(0)	0	—
BS5	R-Y LEVEL	Color-difference adjustment (INPUT 1, 2 only)(502MX only)	Adjustment required				—	—	—	—	—	—	—	—	—
BS7	B-Y LEVEL						—	—	—	—	—	—	—	—	—
BS9	Y DELAY	Y delay setting (INPUT 1, 2 only)(502MX only)	1	0	3	4	—	—	—	—	—	—	—	—	—
BS11	CTI LEVEL	Color transient setting (INPUT 1, 2 only)	1(2)	2	2	2	2	2	—	—	—	—	—	—	—

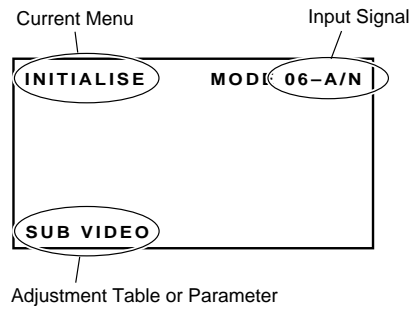
SCART RGB: PDP-502MXE Only, (): PDP-502MXE

Note 1) For Parameter , adjustment values are fixed.

Note 2) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged.

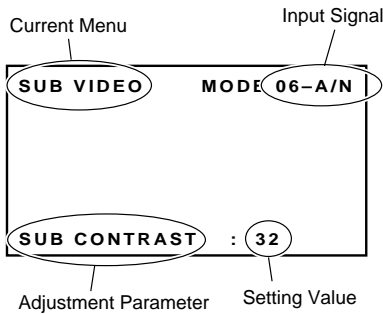
Adjust only in case of necessity.

■ INITIALIZE mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	SUB VIDEO	Go to SUB VIDEO adjustment menu with "SET" key	—
2	MIRROR MODE (502MX only)	Setting Mirror mode OFF → X XY ← Y	OFF
3	FULL MASK	Setting Full mask display OFF ↔ ON	OFF
4	COLOR DETECT (502MX only)	Setting Color detecting EURO ALL ← SA	EURO mode
5	HOUR METER (502MX only)	Displaying operation hour meter	—
6	BAUD RATE (502MX only)	Setting Baud rate 1200 → 2400 19200 ←	4800
7	EEPROM INIT.	Initializing EEPROM (Do not use)	—
8	MASK CONTROL	Setting Original /4:3 displaying area motion mode. OFF ↔ ON	ON
9	DRIVE ADJ	Go to DRIVE adjustment menu with "SET" key	—
11	INTE. MODE	Setting Integrator mode lock/ free LOCK ON ← FREE	ON
BS5	FINAL SET UP	Setting to default factory setting with "SET" key (refer to Details of FINAL SETUP)	—

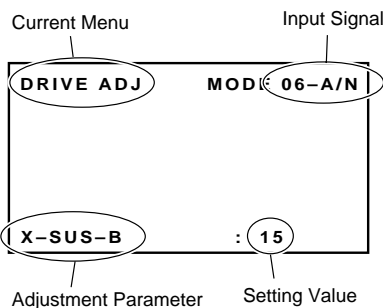
● SUB VIDEO mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	SUB CONTRAST	Sub Contrast adjustment (except for PC)	Adjustment required
2	SUB BRIGHT	Sub Brightness adjustment (except for PC)	Adjustment required
3	SUB TINT (502MX only)	Sub Tint setting (except for PC)	64
8	PULSE NUMBER (502MX only)	Base pulse number adjustment (note)	8
9	ABL LEVEL (502MX only)	ABL Level value adjustment (note)	128
BS5	ACL SW	ACL setting OFF ↔ ON	ON
BS11	D RANGE SW	Dynamic Range setting OFF ↔ ON	OFF

Note) If unnecessarily adjusted, power consumption of the unit is changed and the panel is damaged. Adjust only in case of necessity.

● DRIVE ADJ mode (Common for all input signal types and formats)



Remote Control Key	Adjustment Parameter	Adjusting & Setting Item	Setting Value
1	X-SUS-B	Sustain Drive Pulse adjustment	Adjustment required
2	X-SUS-G		8
3	Y-SUS-B		Adjustment required
4	Y-SUS-G		8
10	R SIDE LEVEL	Side Mask color/level setting	100
11	G SIDE LEVEL		97
12	B SIDE LEVEL		100
BS5	R FULL LEVEL	Full Mask color/level setting	255
BS7	G FULL LEVEL		255
BS9	B FULL LEVEL		255

■ Details of FINAL SETUP (Factory default setting)

Item		Default Setting	Remarks
Power(STAND-BY/ON)		STANDBY	
Input function		INPUT1 (502MX), INPUT3 (502MXE)	
Displaying size		NATURAL WIDE	(On video signal input) For each input function
		(PC ①) ORIGINAL (including TYPE)	(On PC signal input) For INPUT 3, 4 ∩ each signal mode The priority order is ① → ② → ③
		(PC ②) 4: 3NORMAL (including TYPE)	
		(PC ③) FULL (including TYPE)	
V. POSITION		0	(On video signal input) For each input function
		0	(On "mode0F-3" input) For each INPUT 3, 4
KEYLOCK		UNLOCK	Common for all input functions
VOLUME		0	Common for all input functions
MUTING		OFF	Common for all input functions
PICTURE		Center value for all adjustment items	For each input function ∩ each signal mode
SCREEN		Center value for all adjustment items	For each input function ∩ each signal mode
POWER SAVE	(VIDEO)	OFF	(On video signal input) Common for all input functions
	(PC)	OFF	(On PC signal input) Common for INPUT 3, 4
COLOR SYSTEM		AUTO	For each INPUT 1, 2
3D Y/C MODE (502MX only)		MOTION	For only INPUT 1
SETTING/SIGNAL		PC/RGB	For each INPUT 3, 4
CLAMP		MODE1	(On RGB signal input) For each INPUT 3, 4
HIGH CONTRAST		OFF	(On video signal input) Common for all input functions
ABL		ON	(On PC signal input) For each INPUT 3, 4
H. ENHANCE		Center value	(On PC signal input) For each INPUT 3, 4
V. ENHANCE		Center value	(On PC signal input) For each INPUT 3, 4
PICTURE		Adjustment values for all adjustment items	Memory cleared for PC For each input function ∩ each signal mode
WHITE BALANCE		Adjustment values for all adjustment items	Memory cleared for PC For each input function ∩ each signal mode
SCREEN		Center value for all adjustment items	For each input function ∩ each signal mode
SIDE MASK	R LEVEL	100	Common for all input functions
	G LEVEL	97	
	B LEVEL	100	
COLOR MODE		1	Common for all input functions
MIRROR MODE		OFF	Common for all input functions
BRIGHT ENHANCE	(VIDEO)	OFF	(On video signal input) Common for all input functions
	(PC)	OFF	(On PC signal input) Common for INPUT 3,4
OSD		ON	Common for all input functions
BAUD RATE		4800BPS	Common for all input functions
FAN CONTROL		AUTO	Common for all input functions
HOUR METER		0	Operation hour
SUB VOLUME	INPUT1	63	Independent sound volume for each input function
	INPUT2	63	
	INPUT3	63	
	INPUT4	63	
FULL MASK		OFF	
COLOR DETECT (502MX only)		EURO	
MASK CONTROL		ON	
INTE. MODE		ON	Integrator mode operable.
ID No.		-- (Not given)	Only commands with ID:** operable

■ Adjustments required when the set is repaired or replaced

■ VIDEO ASSY

● When repaired

- 1) (Procedure 1) Color difference (R-Y/B-Y) adjustment (502MX only)
- 2) (Procedure 2) Sub-Contrast/Sub-Bright adjustment
- 3) (Procedure 8) White balance adjustment

● When replaced

- 3) (Procedure 8) White balance adjustment

■ MAIN POWER ASSY

● When repaired

- 1) (Procedure 3) VSUS/VADR/STB5V/+14V voltage adjustment
- 2) (Procedure 4) VSUS UVP/+B voltage adjustment

● When replaced

- 1) (Procedure 3) VSUS voltage adjustment
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

■ DIGITAL VIDEO ASSY

● When replaced

- 1) (Procedure 5) 5V/3.3V voltage adjustment

● When replaced

No adjustment required.

■ Y DRIVE ASSY

● When repaired

- 3) (Procedure 6) VOFS/VH/IC5V voltage adjustment

● When replaced

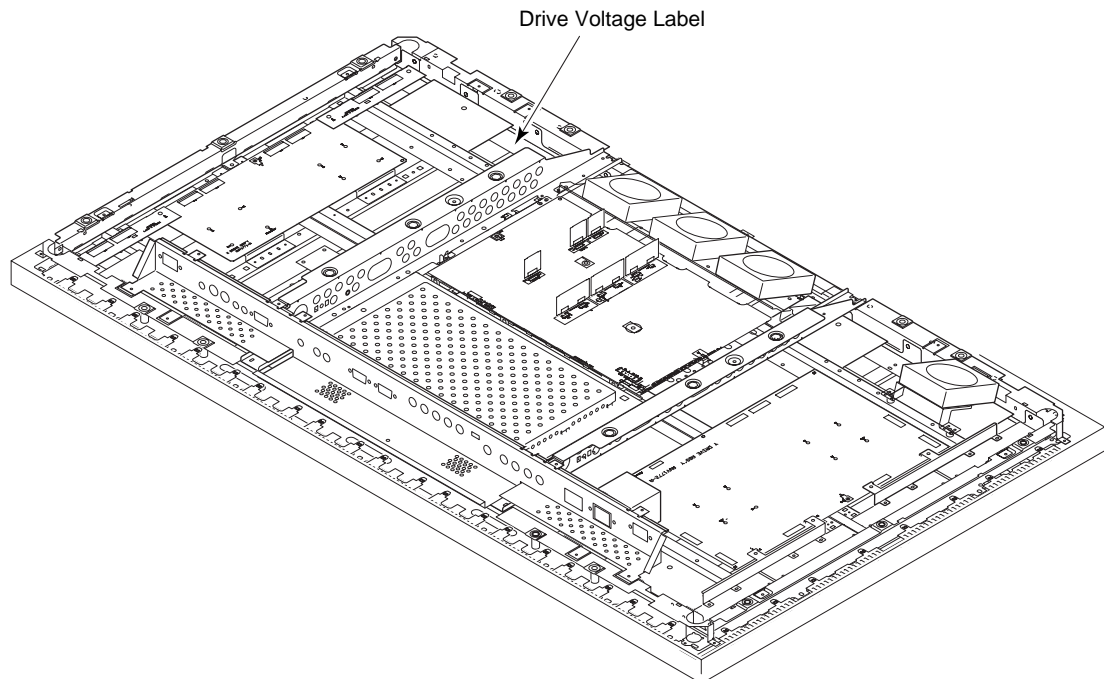
- 1) (Procedure 6) VOFS voltage adjustment
(Adjust the voltage to the voltage value mentioned on the "Drive voltage label")

■ U-COM ASSY

● When replaced

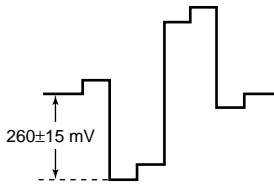
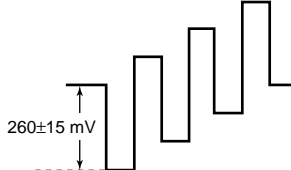
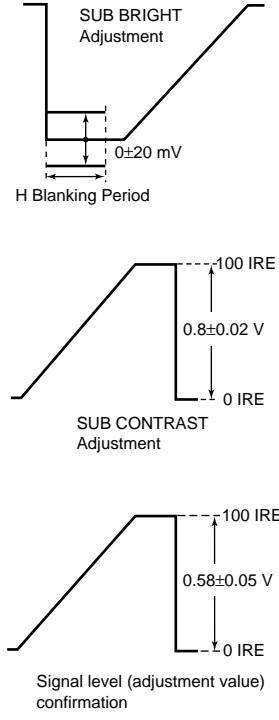
Remove IC3601, EEPROM (24LC64(1)SN-TBB) from the defect ASSY and replace it with the one on the new ASSY.

Caution: Setting of SW, S111 at MAIN POWER ASSY
PDP-502MXE Only: Set the SW, S111 to AC220V side.
Otherwise the power will shutdown.
PDP-502MX/505HD: Set the SW, S111 to AC100V side.


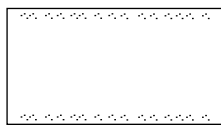


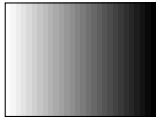
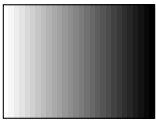
Position of Drive Voltage Label

■ Adjusting Method

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
1	Color-difference Level adjustment (R-Y LEVEL/ B-Y LEVEL) (502MX only)	Full Field Color bar signal	REFERENCE 2 in Factory mode R-Y LEVEL "BS5" Key	R-Y LEVEL adjustment Observe R-Y color-difference waveform at Pin 3 (INT_Cr) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust R-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV". 
			REFERENCE 2 in Factory mode B-Y LEVEL "BS7" Key	B-Y LEVEL adjustment Observe B-Y color-difference waveform at Pin 4 (INT_Cb) of IC1401 (MATRIX IC) in VIDEO Assy. Adjust B-Y LEVEL so that the point indicated in the right figure becomes "260mV±15mV". 
2	SUB CONTRAST/ SUB BRIGHTNESS adjustment	RAMP signal	SUB VIDEO mode in Factory mode SUB CONTRAST..... "1" Key SUB BRIGHT "2" Key ACL. SW "BS5" Key	SUB BRIGHT / SUB CONTRAST adjustment 1) SUB BRIGHT rough adjustment Set P. ACL. SW OFF. Observe signal at K2417 in Video Assy. Adjust so that the blanking period level of the signal becomes 0 IRE level. 2) SUB CONTRAST adjustment Set P. ACL. SW OFF. Adjust so that 0 to 100 IRE level of the signal at K2417 in Video Assy becomes "0.8V". 3) SUB BRIGHT fine adjustment Set P. ACL. SW ON. Adjust so that the signal level in blanking period at K2417 in Video Assy becomes 0 IRE level. 4) Signal level (adjustment value) confirmation Set P. ACL. SW ON. Observe the signal at K2417 in Video Assy . Confirm that the 0 IRE to 100 IRE level of the signal is "0.58V". 

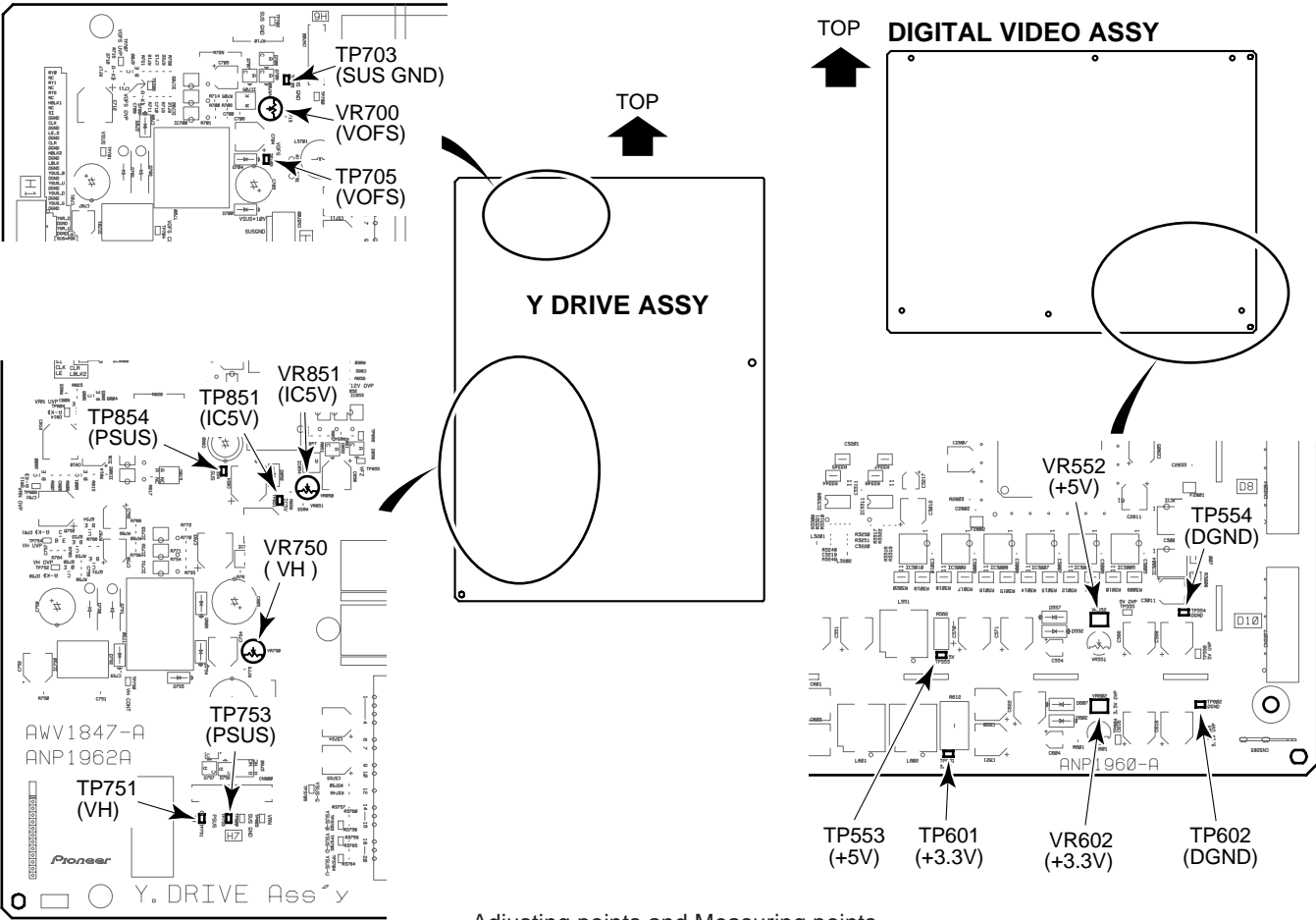
Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
3	VSUS/VADR/ STB5V/+14V Voltage adjustment	White 100% signal	VR201 (VSUS) MAIN POWER ASSY	VSUS (Sustain voltage) adjustment Adjust so that the voltage between TP201(VSUS) and TP202 (SUS GND) becomes ±1V of the voltage indicated at the "voltage indication label". The symptom in case of mis-adjustment If the VSUS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will stop lighting.
			VR301 (VADR) MAIN POWER ASSY	VADR (Address voltage) adjustment Adjust so that the voltage between TP301(VADR) and TP302 (ADR GND) becomes "59V±0.5V". The symptom in case of mis-adjustment If the VADR adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.
			VR111 (STB5V) MAIN POWER ASSY	STB5V adjustment Adjust so that the voltage between TP111(STB5V) and TP113(STB GND) becomes "+5V ± 0.1V".
			VR356 (+14V) MAIN POWER ASSY	+14V adjustment Adjust so that the voltage between TP355(+14V) and TP356 (AGND) becomes "+14V ± 0.1V".
			Note) Be sure to measure between specified test points.	
4	VSUS UVP/+B Voltage adjustment	White 100% signal	VR401 (VSUS UVP) MAIN POWER ASSY	VSUS UVP adjustment Adjust so that the voltage between TP404 (V1) and TP405 (V2) becomes "0V ± 10mV".
			VR131 (+B) MAIN POWER ASSY	+B Voltage adjustment Adjust so that the voltage between TP131 (+B) and TP132 (P. GND) becomes "+380V ± 1.0V".
		Note) Normally, these adjustments are not needed in repair service. Adjust them only when VR is rotated by mistake and it needs to be re-adjusted. Moreover, be sure to measure between specified test points in adjustment.		
5	5V/3.3V Voltage adjustment	Any input signal	VR552 (5V) DIGITAL VIDEO ASSY	+5V adjustment Adjust so that the voltage between TP553 (5V) and TP554 (DGND) becomes "+5V ± 0.05V".
			VR602 (3.3V) DIGITAL VIDEO ASSY	+3.3V adjustment Adjust so that the voltage between TP601 (3.3V) and TP602 (DGND) becomes "3.3V ± 0.05V".
		Note) Be sure to use a non-metallic screw driver such as a ceramic screw driver in the adjustment. If a metallic screw driver is used, DC/DC converter may operate wrongly. Moreover, be sure to measure between specified test points.		

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
6	VOFS/VH/IC5V Voltage adjustment	White 100% signal	VR700 (VOFS) Y DRIVE ASSY	VOFS (Offset voltage) adjustment Adjust so that the voltage between TP705 (VOFS) and TP703 (SUS GND) becomes ± 0.5V" of the voltage indicated at the "voltage indication label". The symptom in case of mis-adjustment If the VOFS adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, Panel will light white.
			VR750 (VH) Y DRIVE ASSY	VH (voltage for Scan IC) adjustment Adjust so that the voltage between TP751 (VH) and TP753 (PSUS) becomes "103V ± 0.5V". PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit. The symptom in case of mis-adjustment If the VH adjustment is not performed properly, dots like blinking luminance points appear. If deviated greatly from the right adjustment point, panel will light white.
			VR851 (IC5V) Y DRIVE ASSY	IC5V adjustment Adjust so that the voltage between TP851 (IC5V) and TP854 (PSUS) becomes "+5.0V ± 0.1V". PSUS (=GNDH) is a floating GND and the electric potential is different from that of chassis GND. Be sure not to short-circuit PSUS (=GNDH) and another GND, because that may damage the unit.
Note) Be sure to measure between specified test points.				
7	Sustain Pulse Waveform adjustment	White 100% signal	DRIVE ADJ mode in Factory mode X-SUS-G....."2" Key Y-SUS-G "4" Key	X-SUS-G, Y-SUS-G adjustment Set to the indicated value with a key on the remote control unit. (refer to DRIVE ADJ mode)
			DRIVE ADJ mode in Factory mode X-SUS-B....."1" Key Y-SUS-B "3" Key	X-SUS-B, Y-SUS-B adjustment 1) Set adjustment value to "8", and confirm that green mis-discharging dots do not appear within 20mm from top & bottom of Screen. 2) When green mis-discharging dots appear, decrease the adjustment value "1" by "1" until green mis-discharging dots will disappear. Set the adjustment value when the green disappear. 3) Observe sustain waveform at each Drive Assy, between K3402 (X-PSUS) and K3404 (SUS-GND), and TP3716 (Y-PSUS) and TP3713 (SUS-GND). Confirm that the waveform is not distorted.  The symptom in case of mis-adjustment  Green mis-discharging dots appear within 20mm from top & bottom of Screen.

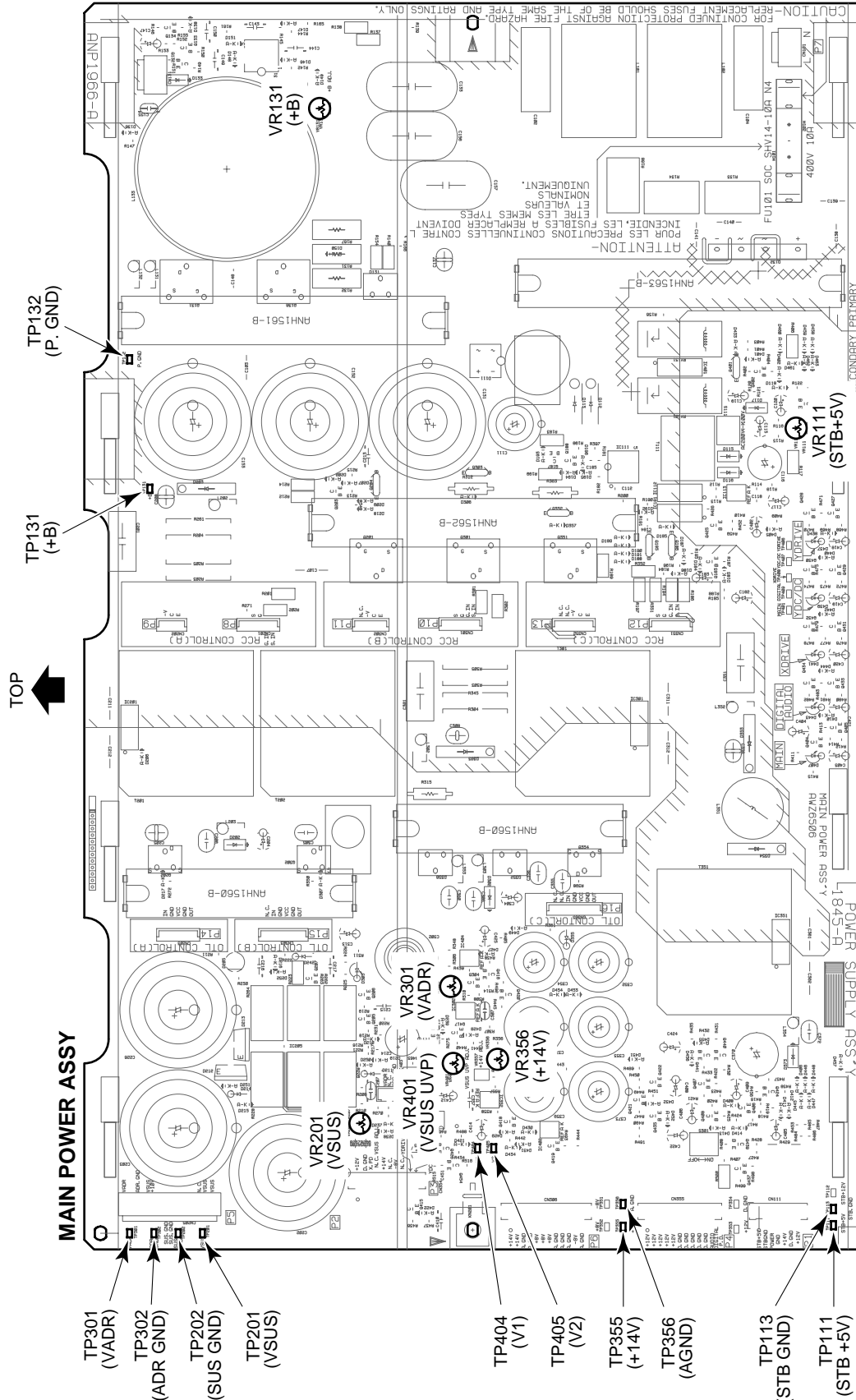
Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method																																																				
8	White Balance adjustment	Preparation setting	REFERENCE 1 in Factory mode CONTRAST....."1" Key BRIGHT "2" Key	Set CONTRAST to "128" and BRIGHT to "128".																																																				
		1) RAMP signal  2) White Signal (14 IRE: Gray)	REFERENCE 1 in Factory mode R LOW..... "10" Key G LOW..... "11" Key B LOW..... "12" Key	LOW LIGHT adjustment 1) Observe the signals at TP terminals R: K2423, G: K2424, B: K2425, of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the black level (0 IRE) of the signal is within the DC voltage range of "1.85V ± 0.05V". 2) Adjust with the keys on the remote control unit, so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv).																																																				
		3) RAMP signal  4) White Signal (56 IRE: Gray)	REFERENCE 1 in Factory mode R HIGH..... "7" Key G HIGH..... "8" Key B HIGH..... "9" Key SUB VIDEO mode in Factory mode ACL. SW"BS5" Key	HIGH LIGHT adjustment 3) Set P. ACL. SW OFF. Observe TP terminals R: K2423, G: K2424, B: K2425 of VIDEO ASSY. Adjust with the keys on the remote control unit, so that the white level (100 IRE) is within the DC voltage range of "2.8V ± 0.05V". 4) Adjust with the keys on the remote control unit. so that the image on the screen becomes a little greenish white (T=8500k, dev.=0.005uv).																																																				
		Skin color	REFERENCE 1 in Factory mode COLOR....."3" Key TINT "4" Key	Convergence adjustment 5) Repeat procedure 2) and 4) to converge the white balance. 6) After the adjustment, set ACL. SW ON. Color balance adjustment After adjusting the white balance, check the skin color of figures in LD still pictures. If the color is not natural, adjust it with the keys on the remote control unit.																																																				
(Reference) Adjustment values using the Minolta color-difference meter (CA-100)																																																								
<table><tr><td></td><td></td><td></td><td>NTSC</td><td>PAL</td><td>HD</td><td>PC</td></tr><tr><td rowspan="6">White Balance</td><td rowspan="3">20% Window-Step signal (−3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>291</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>307</td></tr><tr><td>Y</td><td>3.9</td><td>2.9</td><td>2.9</td><td>2.5</td></tr><tr><td rowspan="3">80% Window-Step signal (−3dB)</td><td>x</td><td>291</td><td>293</td><td>291</td><td>293</td></tr><tr><td>y</td><td>307</td><td>301</td><td>307</td><td>301</td></tr><tr><td>Y</td><td>87.2</td><td>72.5</td><td>87.2</td><td>64.3</td></tr><tr><td rowspan="2">Skin Color</td><td rowspan="2">Window -chroma signal</td><td>x</td><td>466</td><td>440</td><td>428</td><td>—</td></tr><tr><td>y</td><td>388</td><td>370</td><td>377</td><td>—</td></tr></table>								NTSC	PAL	HD	PC	White Balance	20% Window-Step signal (−3dB)	x	291	293	291	291	y	307	301	307	307	Y	3.9	2.9	2.9	2.5	80% Window-Step signal (−3dB)	x	291	293	291	293	y	307	301	307	301	Y	87.2	72.5	87.2	64.3	Skin Color	Window -chroma signal	x	466	440	428	—	y	388	370	377	—
			NTSC	PAL	HD	PC																																																		
White Balance	20% Window-Step signal (−3dB)	x	291	293	291	291																																																		
		y	307	301	307	307																																																		
		Y	3.9	2.9	2.9	2.5																																																		
	80% Window-Step signal (−3dB)	x	291	293	291	293																																																		
		y	307	301	307	301																																																		
		Y	87.2	72.5	87.2	64.3																																																		
Skin Color	Window -chroma signal	x	466	440	428	—																																																		
		y	388	370	377	—																																																		
9	MASK Level adjustment	Any input	DRIVE ADJ mode in Factory mode R SIDE LEVEL "10" Key G SIDE LEVEL "11" Key B SIDE LEVEL "12" Key	Side mask Color/Level adjustment Set to the indicated value with the keys on the remote control unit. (refer to DRIVE ADJ Mode)																																																				
			DRIVE ADJ mode in Factory mode R FULL LEVEL"BS5" Key G FULL LEVEL"BS7" Key B FULL LEVEL"BS9" Key	Full mask Color/Level adjustment Set to the indicated value with the keys on the remote control unit. (refer to DRIVE ADJ Mode)																																																				

PDP-502MX, PDP-502MXE

Procedure	Adjusting Item	Input signal	Adjusting Point	Adjusting Method
10	Base Pulse number Adjustment (502MX only)	Any input	SUB VIDEO mode in Factory mode PULSE NUMBER ....."8" Key	Set to the indicated value with the keys on the remote control unit. (refer to SUB VIDEO mode)
		Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged. Adjust only in case of necessity.		
11	ABL Level Value Adjustment (502MX only)	Any input	SUB VIDEO mode in Factory mode ABL LEVEL ...."9" Key	Set to the indicated value with the keys on the remote control unit. (refer to SUB VIDEO mode)
		Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged. Adjust only in case of necessity.		
12	ABL Level Offset adjustment	Any input	REFERENCE 1 in Factory mode ABL LEV OFFSET ....."BS9" Key	Adjust to the ABL value mentioned on the "Drive voltage label" at the chassis of the glass panel.
		Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged. Adjust only in case of necessity.		
13	Pulse Number Offset adjustment	Any input	REFERENCE 1 in Factory mode PLS NUM OFFSET ....."BS11" Key	Set to the indicated value with the keys on the remote control unit. (refer to REFERENCE 1 mode)
		Note) If unnecessarily adjusted, power consumption is changed and the panel is damaged. Adjust only in case of necessity.		



Adjusting points and Measuring points



Adjusting points and Measuring points

7. GENERAL INFORMATION

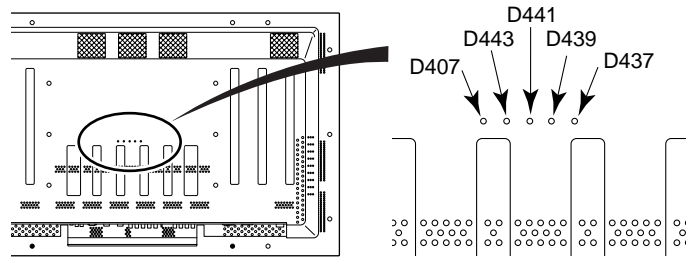
7.1 DIAGNOSIS

7.1.1 DIAGNOSIS METHOD

This PDP has several protection circuits, and the operation of the circuits activate power down circuit and set the unit automatically to standby mode in order to protect the circuit.

Power shut down operation of the unit can roughly be diagnosed by LED indicators at Main Power Assy.

Lighting of LEDs can be confirmed through five holes on Rear Panel.



■ Diagnosis of malfunctions when power down occurs (in lighting LEDs at Main Power Assy)

Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407	High between base & emitter of Q415	VSUS OVP	When RCC Control (A) Assy is replaced, P.D. does not occur.	RCC Control (A) Assy	IC203 • Q208 • R232 • D224 • 226
			When OTL Control(A) Assy is replaced, P.D. does not occur.	OTL Control (A) Assy	IC204 • Q209 • 210 • R260
			Even when RCC Control(A) Assy and OTL Control(A) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC201 • 202
	High between base & emitter of Q417	VADR OVP	When RCC Control (B) Assy is replaced, P.D. does not occur.	RCC Control (B) Assy	IC303 • Q305 • R316 • 314
			When OTL Control (B) Assy is replaced, P.D. does not occur.	OTL Control (B) Assy	IC304 • Q306 • 307 • R346
			Even when RCC Control(B) Assy and OTL Control (B) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC301 • 302
	High between base & emitter of Q419	14V OVP	When RCC Control (C) Assy is replaced, P.D. does not occur.	RCC Control (C) Assy	IC353 • Q353 • R364 • D362 • 364
			When OTL Control(C) Assy is replaced, P.D. does not occur.	OTL Control (C) Assy	IC354 • Q356 • 357 • R396
			Even when RCC Control (C) Assy and OTL Control (C) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC351 • 352
	D408 Anode is High / High between base & emitter of Q426	VSUS UVP	When CN205 is disconnected, P.D. occurs, and when RCC Control (A) Assy is replaced, P.D. does not occur.	RCC Control (A) Assy	IC203 • Q208 • R232 • 254 • C221
			When CN205 is disconnected, P.D. occurs, and when OTL Control (A) Assy is replaced, P.D. does not occur.	OTL Control (A) Assy	IC204 • Q209 • 210 • R260
			When CN205 is disconnected, P.D. occurs, and even when RCC Control (A) Assy and OTL Control (A) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC201 • 202 • D212 • 214
			When CN3401 is disconnected, P.D. does not occur.	X DRIVE Assy	Pulse module IC3402 • 3405
			When CN3601 is disconnected, P.D. does not occur.	Y DRIVE Assy	Pulse module IC3604 • 3609 • 3610
	D408 Anode is High / High between base & emitter of Q416	VADR UVP	When CN205 is disconnected, P.D. occurs, and when RCC Control (B) Assy is replaced, P.D. does not occur.	RCC Control (B) Assy	IC303 • Q305 • R316 • 338 • D320 • C317
			When CN205 is disconnected, P.D. occurs, and when OTL Control (B) Assy is replaced, P.D. does not occur.	OTL Control (B) Assy	IC304 • Q306 • 307 • R346

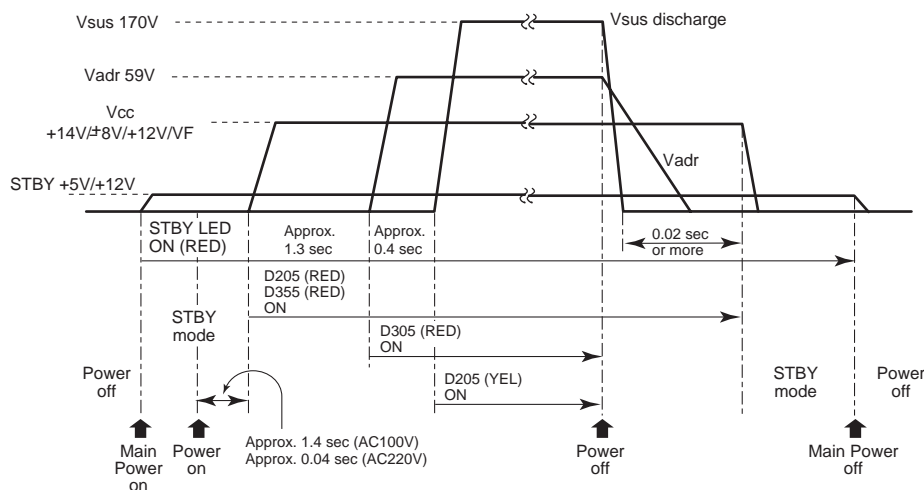
Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407	D408 Anode is High/ High between base & emitter of Q416	VADR UVP	When CN205 is disconnected, P.D. occurs, and even when RCC Control (B) Assy and OTL Control (B) Assy are replaced, P.D occurs.	MAIN POWER Assy	IC301 • 302 • Q302
			When CN205 is disconnected, P.D. does not occur.	CABLE Assy	
	D408 Anode is High/ High between base & emitter of Q418	14V UVP	When CN306 & 354 are disconnected, P.D. occurs.	MAIN POWER Assy 14V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
			When CN354 is disconnected, P.D. does not occur.	Y DRIVE Assy IC5V D/D CONV. BLOCK	IC852
	D408 Anode is High/ High between base & emitter of Q421	12V UVP	When CN355 is disconnected, P.D. occurs.	MAIN POWER Assy 12V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN356 is disconnected, P.D. does not occur.	DIGITAL VIDEO Assy D/D CONV. BLOCK	IC551 • 601 • Q554 • 555 • 604 • 605
	D408 Anode is High/ High between base & emitter of Q420	8V UVP	When CN306 is disconnected, P.D. occurs.	MAIN POWER Assy 8V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
	D408 Anode is High/ High between base & emitter of Q435	-8V UVP	When CN306 is disconnected, P.D. occurs.	MAIN POWER Assy -8V D/D CONV. BLOCK	RCC Control (C) Assy • OTL Control (C) Assy • IC351 • 352 • D373
			When CN306 is disconnected, P.D. does not occur.	ANALOG VIDEO Assy	
D407 • D443	D405 Anode is High	B OVP		MAIN POWER Assy PFC BLOCK	IC131
	High between base & emitter of Q111	AC200V P.D.	AC power input is appropriate.	MAIN POWER Assy STB BLOCK	IC111 • 112 • 113 • T111
	D852 Anode is High.	VF OVP		Y DRIVE Assy	IC852 • 853 • 854
	TP555 Hi	5V OVP	When the power supply is turned on, a part of the screen shines in white momentarily and P.D. occurs.	DIGITAL VIDEO Assy 5V D/D CONV. BLOCK	IC551
		5V UVP			
		3.3V OVP		DIGITAL VIDEO Assy 3.3V D/D CONV. BLOCK	IC601
		3.3V UVP			
	TP555 Lo	ICP OPEN	When the power supply is turned on, a part of the screen shines in white momentarily and P.D. occurs.	CABLE Assy RESONATOR BLOCK	IC1008 • Q1001–Q1006
	TP556 Lo			Address Module	UPD16340 (IC???????)
	TP603 Lo			DIGITAL VIDEO Assy DIGITAL BLOCK	IC2201
	TP604 Lo				
	D4501 Anode is High.	AUDIO P.D.		AUDIO Assy	IC4502 • C4520 • 4522
D407 • D441	D3457 Anode is High.	12V OCP		X DRIVE Assy Pulse Module	Pulse module IC3402 • 3405
				X DRIVE Assy RESET DRIVE BLOCK	Q3401 • 3402 • 3403
D407 • D439	K706Hi	VOFS OVP		Y DRIVE Assy VOFS D/D CONV. BLOCK	IC702 • 704
	K705Hi	VOFS UVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VOFS D/D CONV. BLOCK	IC701 • 702 • 704
			VOFS D/D Conv. Block in normal operation	Y DRIVE Assy SUS_MSK BLOCK	R3717 • 3730
	K754Hi	VH OVP		Y DRIVE Assy VH D/D CONV. BLOCK	IC751 • 752

PDP-502MX, PDP-502MXE

Lighting LED	The state of circuit	P.D. circuit in operation	Diagnosis	Failure points	Estimated failure parts
D407 • D439	K751Hi	VH UVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VH D/D CONV. BLOCK	IC751 • 752 • 755
			VH D/D Conv.Block in normal operation	SCAN MODULE	SCAN IC
			Scan Module in normal operation.	Y DRIVE Assy IC5V D/D CONV. BLOCK	IC851 • 852 • 853
	K804Hi	VRN OVP	Drive section (drive control signals & drive signal output elements) in normal operation.	Y DRIVE Assy VRN D/D CONV. BLOCK	IC801 • 803
	K801Hi	VRN UVP	VRN D/D Conv. Block in normal operation.	Y DRIVE Assy VRN D/D CONV. BLOCK	IC801 • 802 • 803
				YDRIVE Assy SUS_MSK BLOCK	R3717 • 3730
	K854Hi	IC5V OVP		Y DRIVE Assy IC5V D/D CONV. BLOCK	IC851 • 853
D407 • D437	K3607Hi	12V OCP	Output voltage of IC3606, 3607, 3608 are normal		Pulse module IC3604 • 3605 • 3609 • 3610
			Output voltage of IC3606, 3607, 3608 are abnormal.		IC3611 • 3612 • 3613 • 3615 • 3601 • 3602 • 3603 • 3614
	K3704Hi	RESET OCP		Y DRIVE Assy RESET BLOCK	Q3708
	D3751 Anode is High.	DRIVE STOP P.D.		DIGITAL VIDEO Assy	IC2201 (IC23)

OVP: Over Voltage Protection, OCP: Over Current Protection, UVP: Under Voltage Protection

■ Diagnosis of malfunctions by power coming up sequence



The power coming up sequence of power supply

■ Simple diagnosis using LEDs at Main Power Assy

The state of LEDs at Main Power Assy	Estimated P.D. circuit in operation
After D205 lights up in red, D407 lights up. (D205 lights up in yellow in normal operation.)	VSUS UVP
After D305 is put out the light, D407 lights up. (D305 lights up in red in normal operation.)	VADR UVP
After D355 is put out the light, D407 lights up. (D355 lights up in red in normal operation.)	14V • 12V • ±8V UVP, B OVP, VF OVP
D407 lights up at the stand-by mode.	AC200V P.D.
After D205, D305 and D355 lights up normally, D407 lights up.	VSUS OVP
After D305 and D355 lights up normally, D407 lights up.	VADR OVP
After D355 lights up normally, D407 lights up.	14V OVP

■ Diagnosis when under voltage is detected at V SUS / V ADR voltage lines.

- Disconnect connector CN205 P5 at Main Power Assy and turn on the power.
If the power is turned on and D205 at Main Power Assy lights up in yellow, cause of the under voltage is not inside Main Power Assy.
If P.D. occurs, V SUS / V ADR DC-DC Converter block at Main Power Assy may be defective.

■ Diagnosis when under voltage is detected at 14V, 12V, +-8V voltage lines

- Be sure to turn off High Power CUT SW, S301 at Power Supply Assy. (important)
- Disconnect CN306 P6, CN355 P4, CN354 P3, CN353 P2 at Main Power Assy one by one, and turn on the power of the unit.
(Do not disconnect all four connectors at the same time and turn on the power. Because this leads to no load of power supply and that is very dangerous.)
- When the power is turned on with a connector disconnected, and if Low power supply DC-DC Converter operates normally with lighting D355 and D205 in red, cause of under voltage is not inside Main Power Assy.
- If P.D. still occurs after disconnecting each connector, 14V DC-DC Converter block at Main Power Assy may be defective.

■ The function of High Power CUT SW, S301 at Main Power Assy

- When S301 is turned off, V SUS / V ADR DC-DC Converter does not operate. However, 14V DC-DC Converter operates normally.
- Therefore, diagnosis from Signal Input circuit to before Drive circuit is possible without danger of breaking Drive section by mistake.

■ AC100V/AC200V Change-over SW, S111 at Main Power Assy

- Only PDP-502MXE is set to AC200V.
- When the SW is set to AC100V, AC200V P.D. detecting circuit will operate. (Even when the unit is in Stand-by mode, the detecting circuit is in operation.)

■ Diagnoses of the malfunctions by LEDs at Digital Video Assy, D2302/D2306

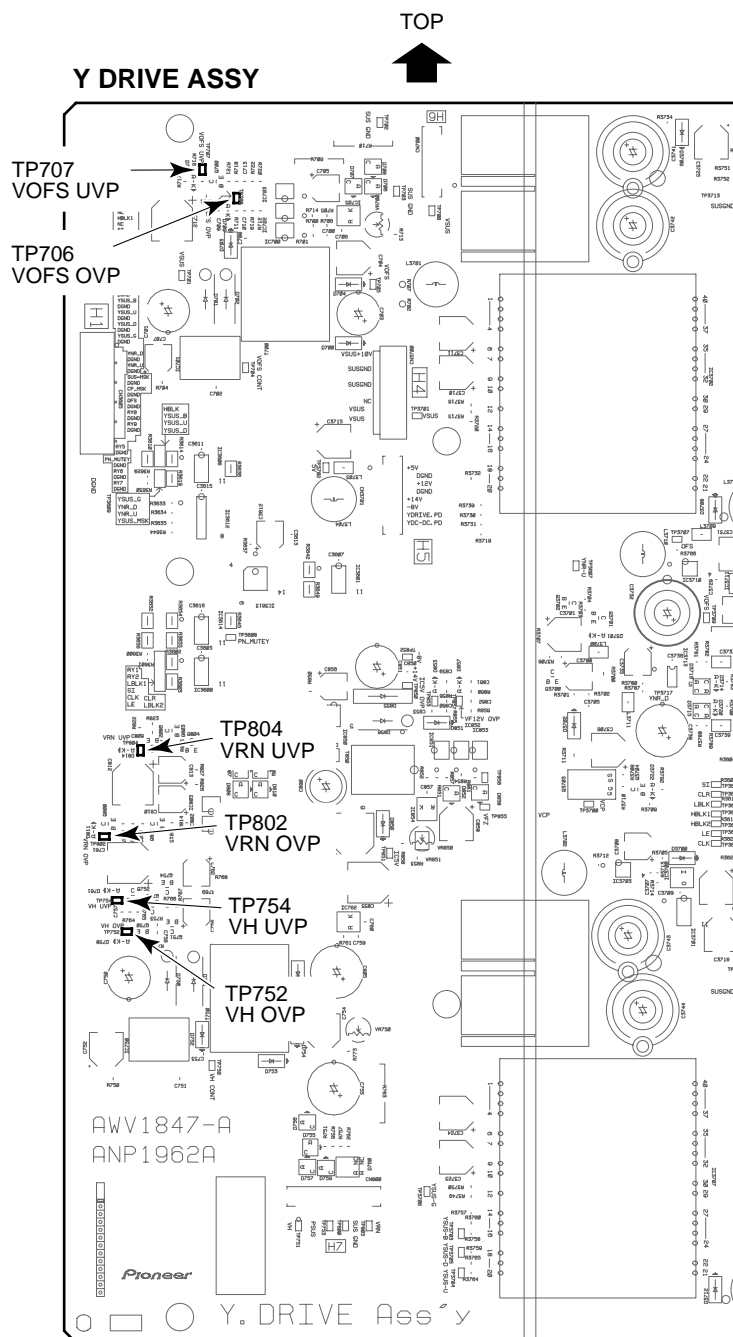
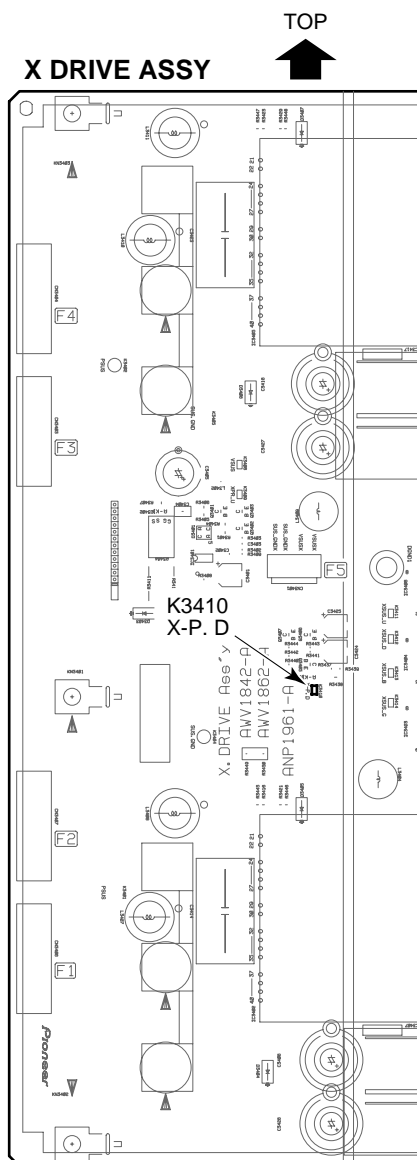
LED	Title (Color of Light)	The timing of lighting	Estimated failure parts
D2302	STOP (GREEN)	Lights on in normal operation It lights up at every V rate, when Drive pulse output from IC2201 is normal.	Around IC2101/IC2151/IC2801 /X3202 (Xtal)
D2302	PBusy (RED)	Light is put off in normal operation. It lights up when System Control CPU (IC3604) and Panel CPU are communicating.	Around Connector and Panel CPU and X3202/X3201 (Xtal)
D2306	IP Busy (RED)	It lights up at every V rate during IP processing.(Video input) Light is put off when IP processing is not done. (PC input)	Around IC1801/IC1901/IC2001

■ Diagnosis of malfunctions other than the operation of protection circuits

The state of the unit	Estimated failure mode
STBY indicator does not light at all	<ul style="list-style-type: none"> ● AC power input is not appropriate. ● Stand-by power supply block is defective. ● U-com Assy is defective. ● Connectors disconnected.
Power does not go on Power shuts down immediately after power on. (back to Stand-by)	<ul style="list-style-type: none"> ● U-com Assy is defective.
Dots like luminance spots appear on the screen.	<ul style="list-style-type: none"> ● Drive section voltage is abnormal. (VSUS, VADR, VOFS, VH, VRN) ● X Drive Assy and Y Drive Assy are defective. ● Scan Module is defective.
Screen does not emit lights at all.	DIGITAL VIDEO Assy is defective.
Fuse is blown.	<ul style="list-style-type: none"> ● Q131–Q136, D131, IC131 Defective ● R133, R134, R168 Defective ● Q201, Q202, RCC Control (A) Assy, OTL Control (A) Assy Defective ● Q301, Q302, RCC Control (B) Assy, OTL Control (B) Assy Defective ● Q351, Q354, RCC Control (C) Assy, OTL Control (C) Assy Defective

■ Note for repairing in case of blown fuses

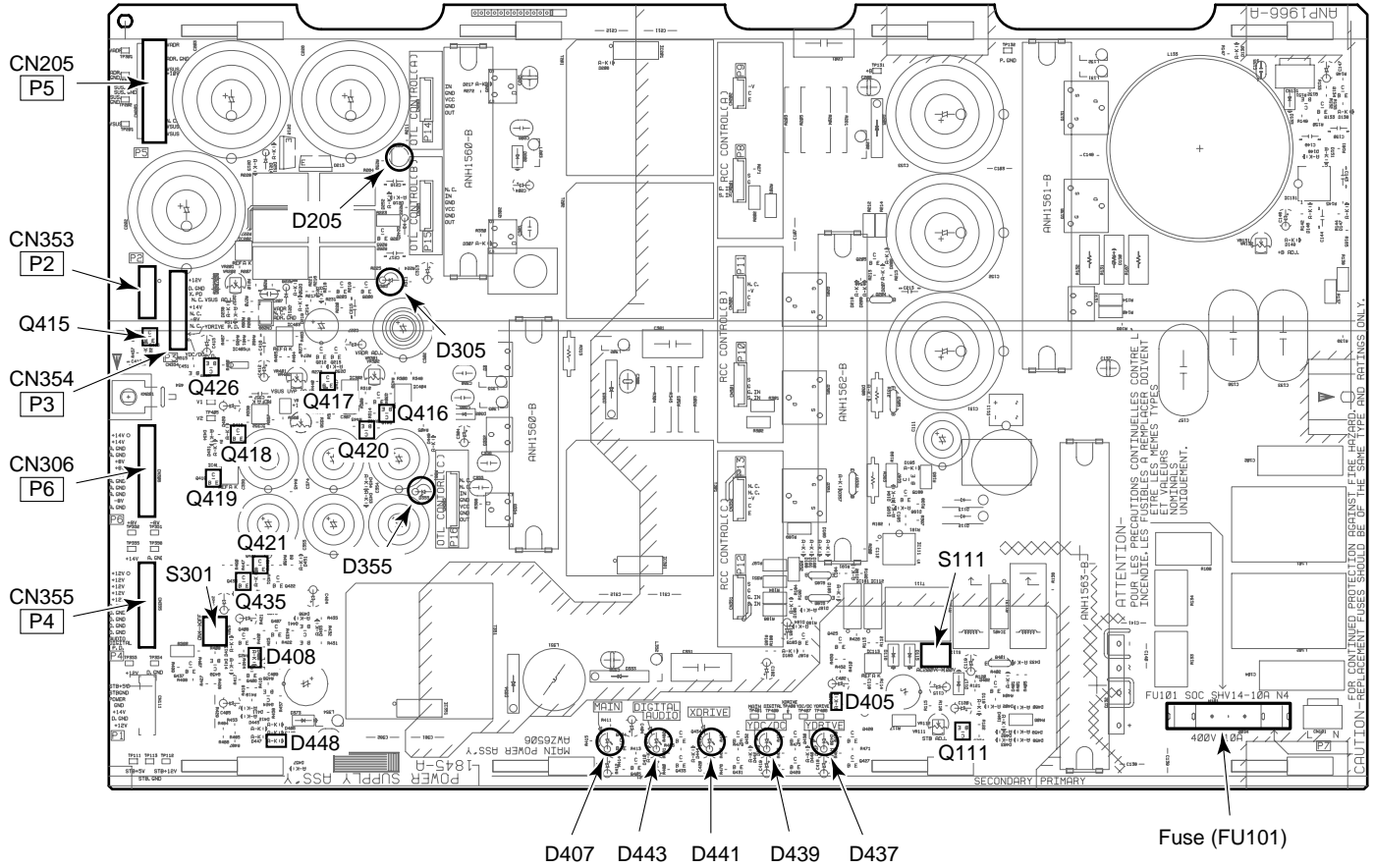
- Never turn on the power of the unit again just by replacing the fuse, when the fuse is blown.
Because, it is rare case that the fuse itself is defective. If the power is turned on again without resolving the cause of over current, the unit is damaged more.
- Be sure to check parts such as In-Rush current protective resistors where excessive current may flow.
Because, they may be damaged secondarily.
- Be sure to find out all defective parts caused by a blown fuse.
Because, if the power is turned on with even one defective part left in the circuit, this may lead the other parts to become defective again.



TOP



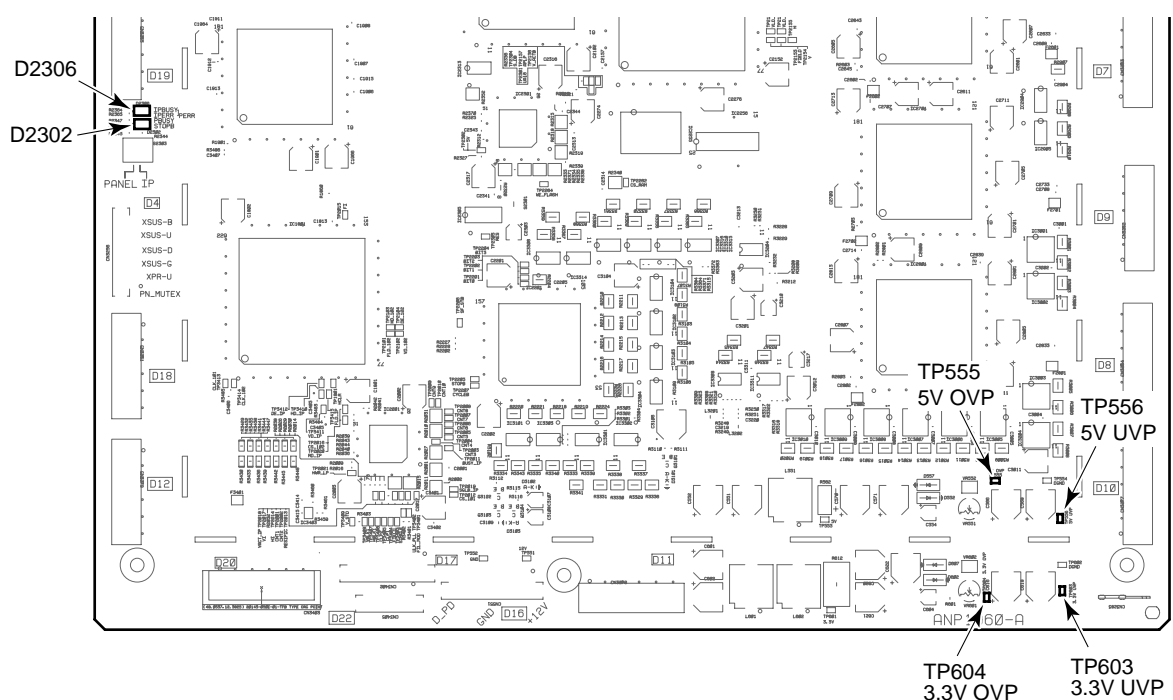
MAIN POWER ASSY



TOP

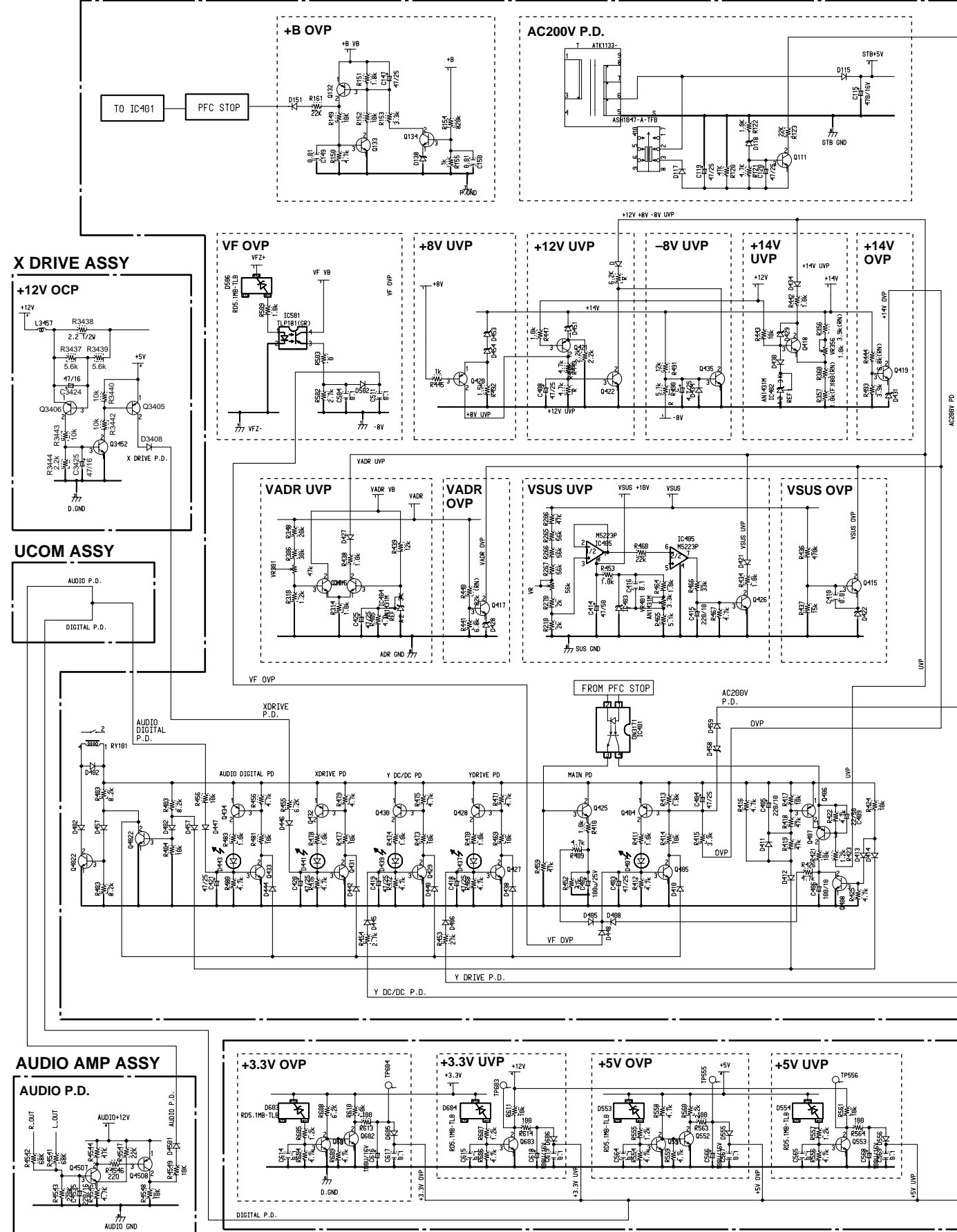


DIGITAL VIDEO ASSY



Protection Circuits

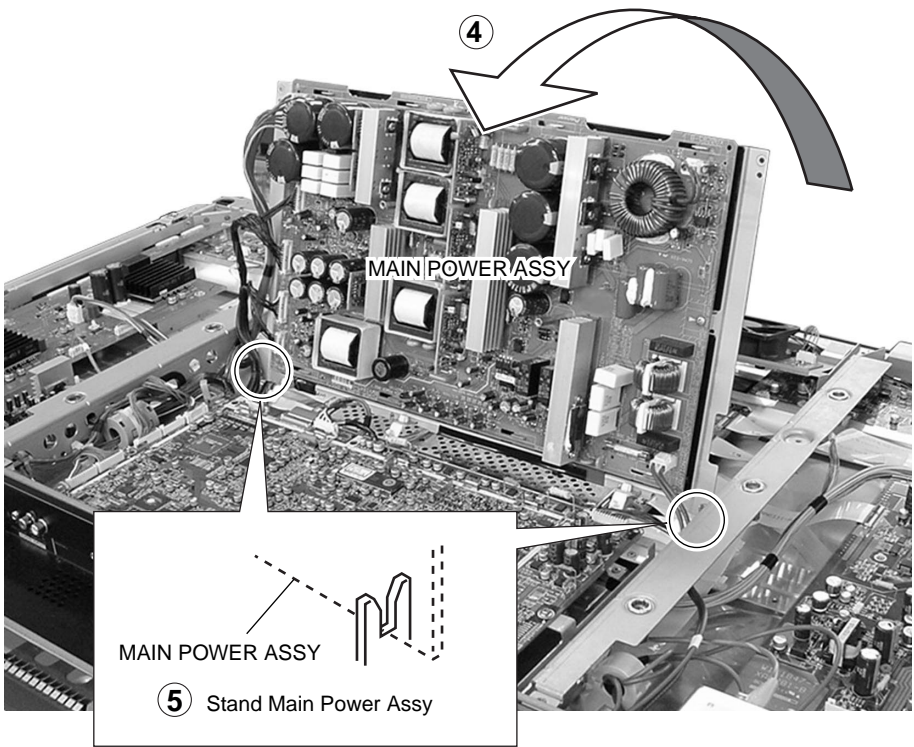
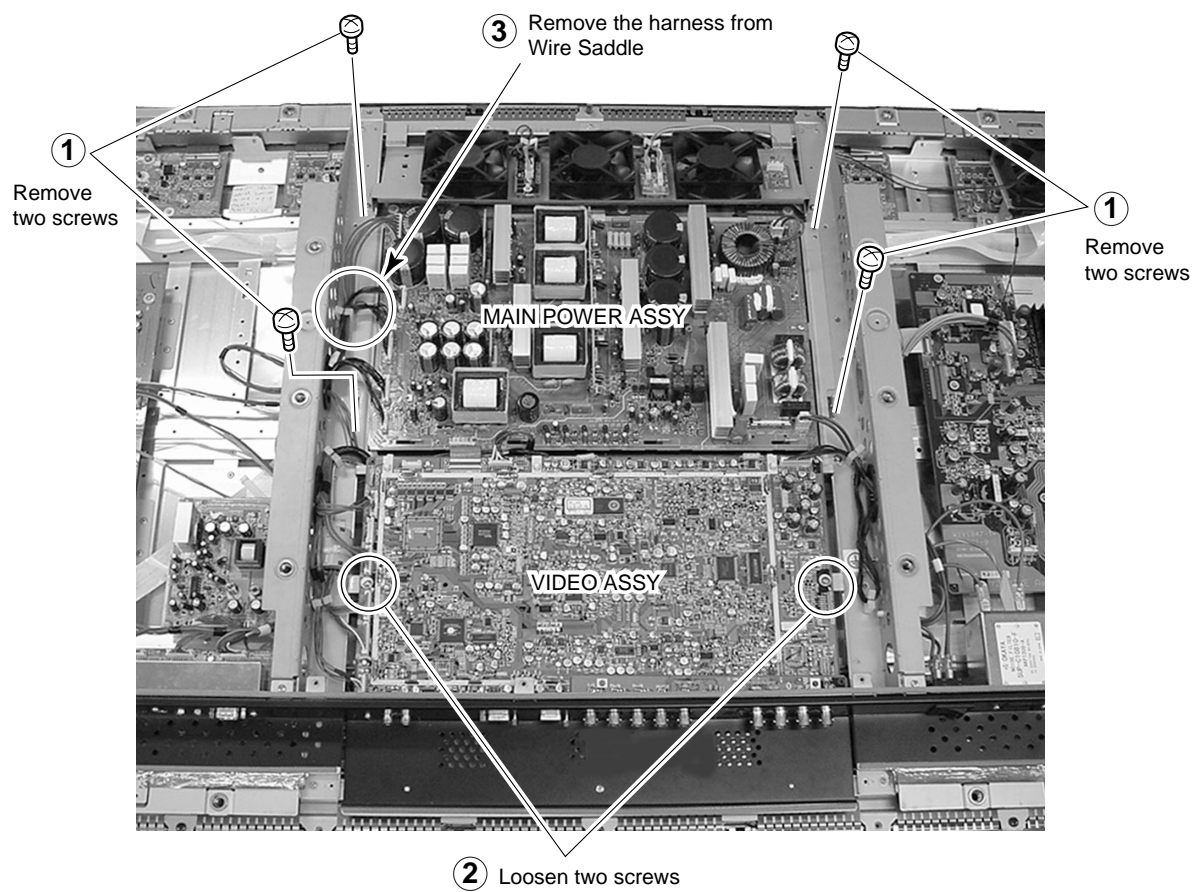
MAIN POWER ASSY





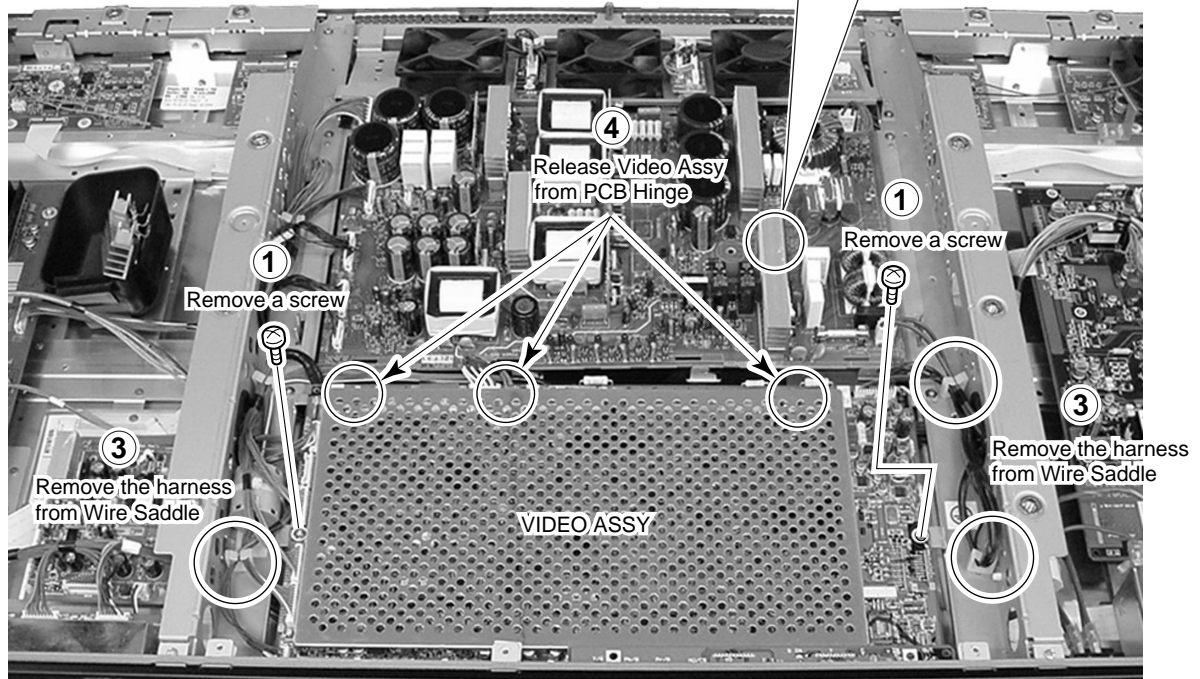
■ Service Position

1. MAIN POWER ASSY

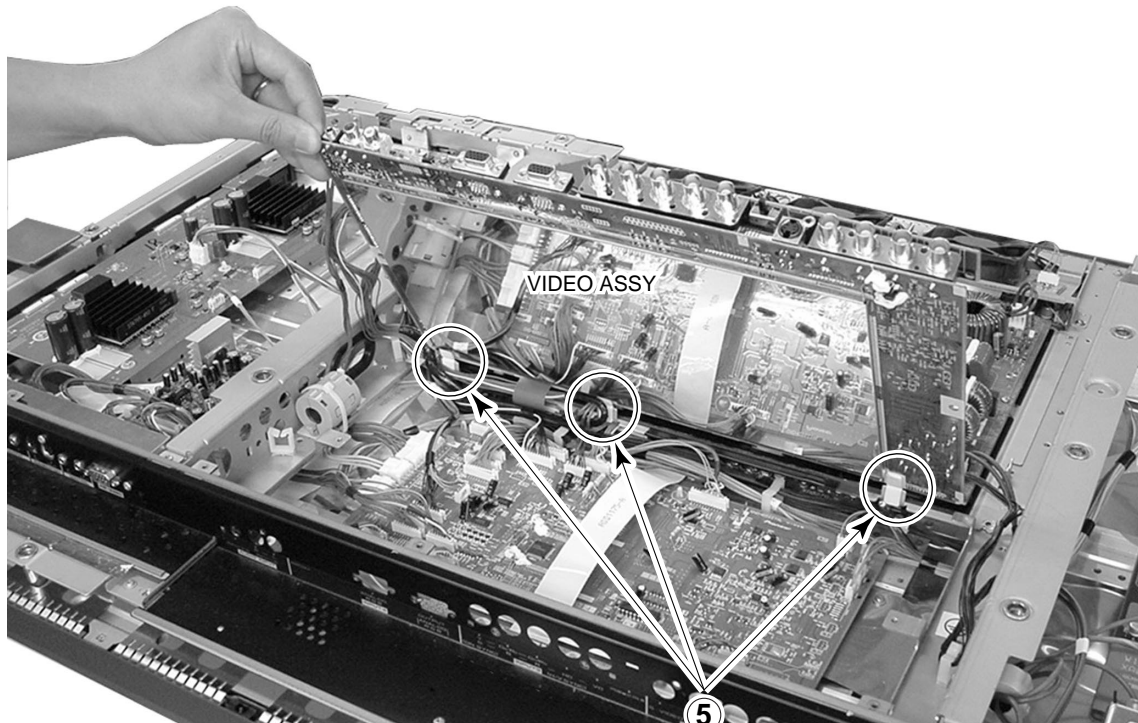


2. VIDEO ASSY

Note) Shield Case of Video Assy should not touch the heat sink at the primary side of Main Power Assy in standing Video Assy. (Noise may be generated and that may break the Main Power Assy)



2 Remove all screws and nuts from Terminal Panel



After pulling VIDEO Assy backward to release it from Terminal Panel, insert it to the PCB Hinge again.

7.1.2 DISASSEMBLY

1. Removing Front Case (Figure 1)

- 1) Secure the unit on the stand in the upright position.
- 2) Remove 14 screws (A): BBZ40P160FZK at the outermost circumference of Rear Case.
There is one screw with a screw collar. Pay attention to the direction of the collar. (Refer to Figure 1)
- 3) Remove 4 screws (B): BBZ40P160FZK.
- 4) In this condition, only Front Case can be detached from the unit by pulling out Front Case in the forward direction.

Note) Be careful of Remote Receiver Holder and SW Holder in detaching Front Case, because they are not fixed to Front Case.

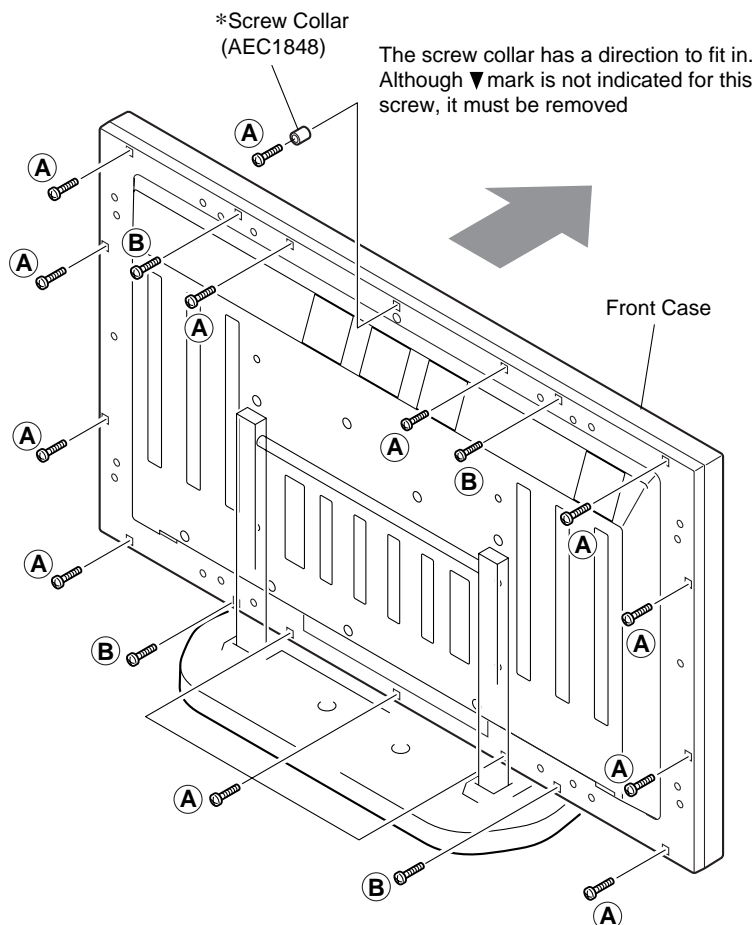


Figure 1 Removing Front Case

2. Removing Rear Case (Figure 2)

- 1) Place the unit with Front Panel down on a flat cushion.
- 2) Remove a screw rivet (AEC1852).
- 3) Remove 14 screws (A). (Refer to Removing Front Case)
- 4) Remove 17 screws (C): AMZ30P100FZK.
- 5) Remove 2 stand-bolts (D): ABA1277.
- 6) In this condition, Rear Case can be detached.

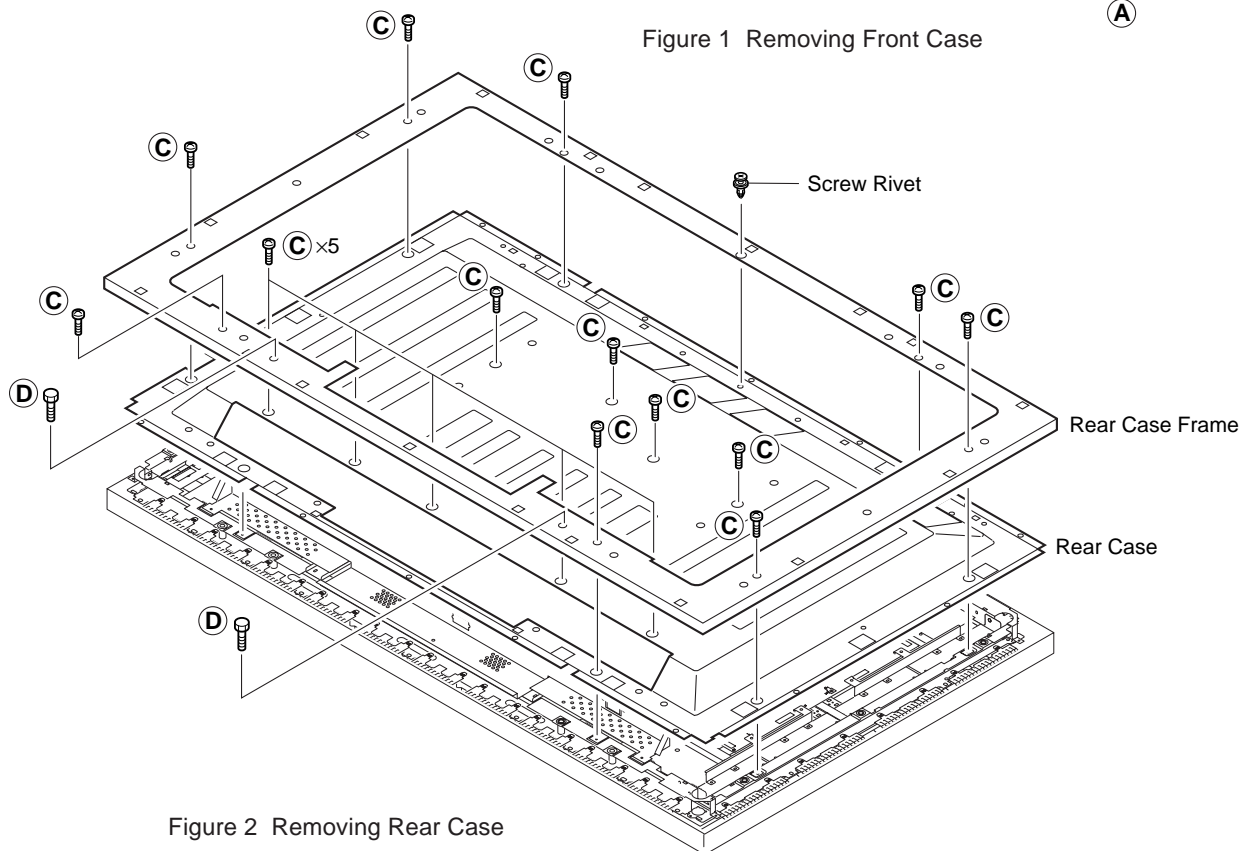


Figure 2 Removing Rear Case

3.Removing and installing Front Protection Panel

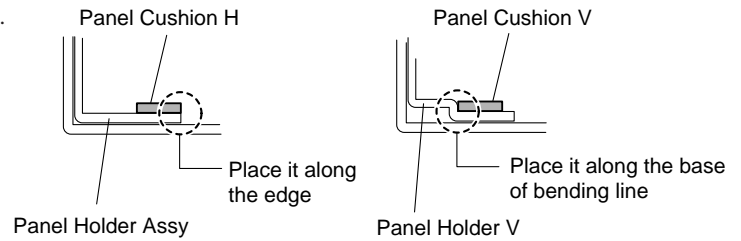
- 1) Remove all 30 screws (E): BPZ30P080FZK that fixes Panel Holder V and Panel Holder Assy to Front Case.
- 2) Remove Front Protection Panel and replace it.
- 3) Install Front Protection Panel by attaching to the bottom left side first, and then attach a Corner Cushion to each corner (only bottom left side, attach a Corner Gasket).

Note) When new Front Protection Panel is installed, Front Cushion H and Front Cushion V attached to Front Case are not needed to be replaced.

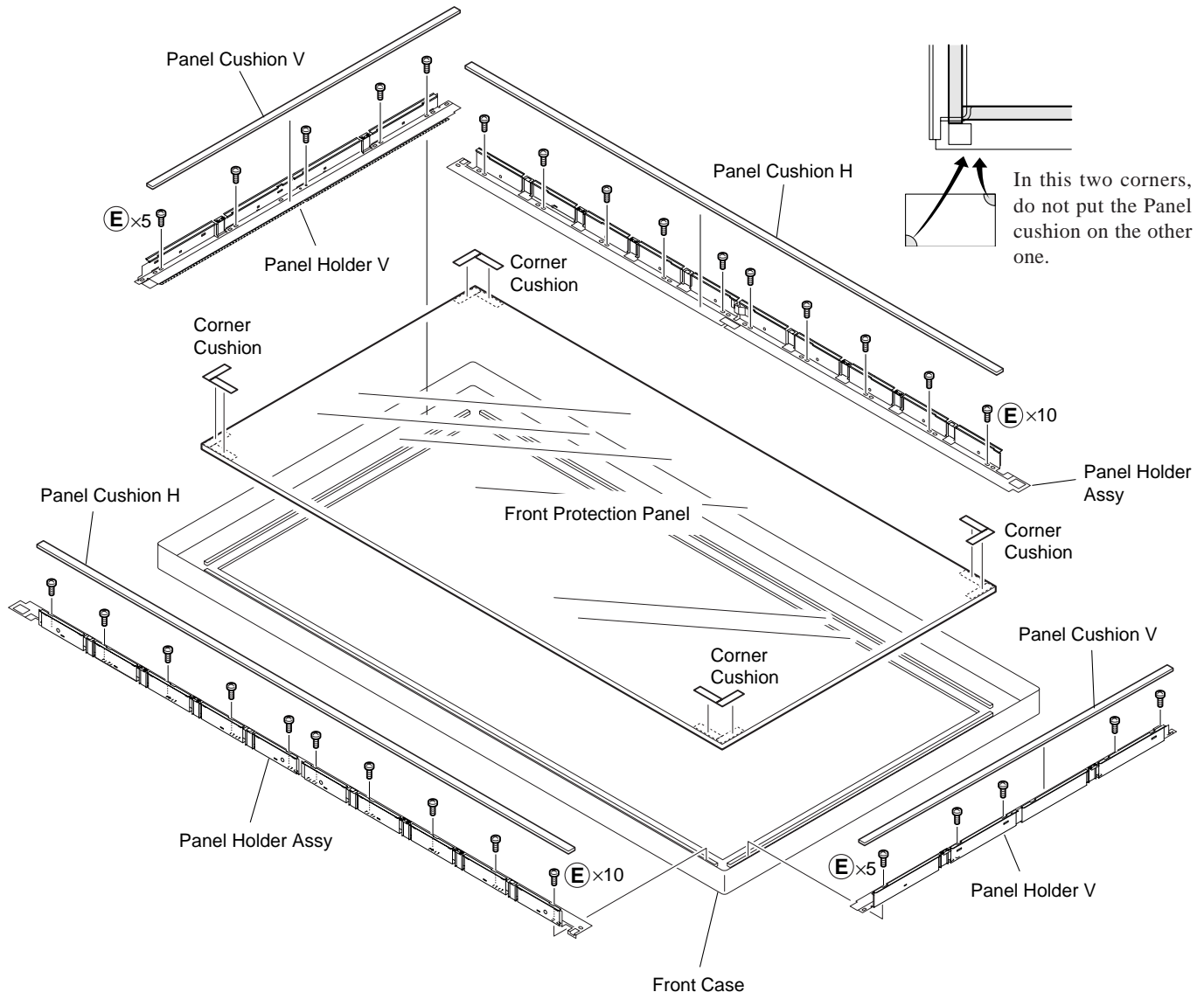
- 4) Assemble Front Case in the opposite order of disassembling it.
Mount Panel Holder Assy first, then mount Panel Holder V.

Note)

- Attach Panel Cushion V along the base of bending line of Panel Holder V, and attach Panel Cushion H along the edge of Panel Holder Assy like shown in Figure 3.
- Panel Holder V / Panel Shield V and Panel Holder Assy / Panel Shield H are inlaid fixed structures.
- Be careful not to lose Remote Receiver lens, because it is not fixed to any where after removing Panel Holder Assy.



How to attach Panel Cushions



7.1.3 WIRING

When forming the wire cables, be careful not to exert excessive pressure on the cables as this will result in the disconnection of the connectors.

Press-down type lower contact connector

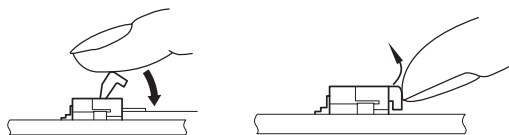
1. Locking

Lock applying force in the arrow direction so that the connector is pressed down inwards.

2. Unlocking

Push up with your nail, or something soft.

Do not use thin tools such as the tip of screwdrivers, because they will damage the electrode.

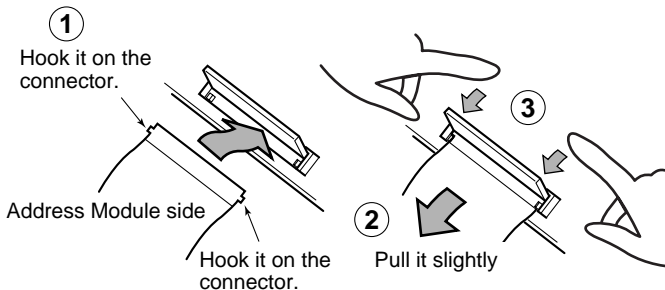


- Insert the flexible cables straight until the end.

Insert the flexible cable reinforcing plates in parallel to the connectors. Moreover, insert the horizontal-connecting connectors horizontally.

- In connecting Address Modules and Cable Assy, and in connecting Scan Modules and Y Drive Assy with the flexible cables, hook both edges of the flexible cables on the connectors and fix them, then close the covers.

Insert the flexible cables in parallel to the connector, otherwise the connectors may be damaged.

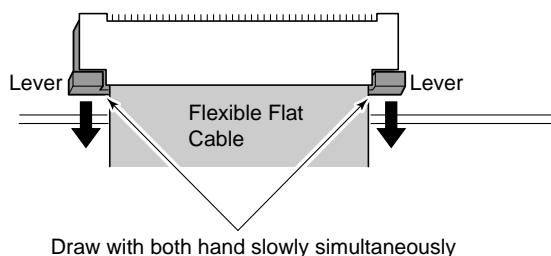


Note) When closing the connector cover, press both edges of the cover by fingers to lock it. Pressing the center of the cover may damage it.

Matters that require attention of upper contact connector (Use with VIDEO ASSY **A33** and DIGITAL VIDEO ASSY **D20**)

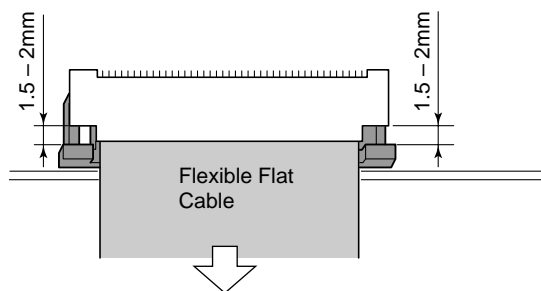
■ Lock cancel release step

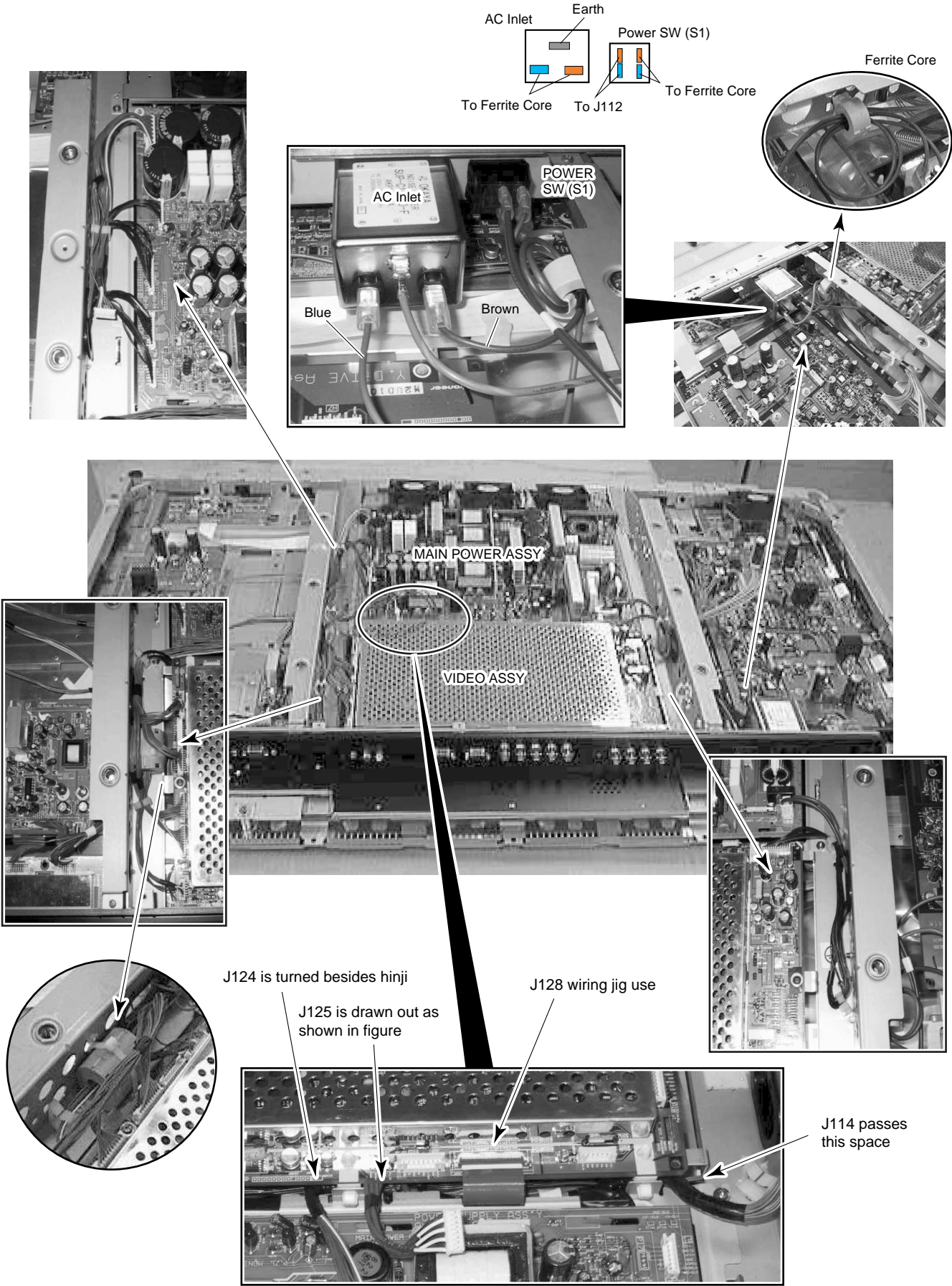
- ① Throw on lever of **right and left each side** with claw, and please draw in **right and left real time slowly** to orientation of arrow. Then lever is **damaged** that by one side seems to go down.

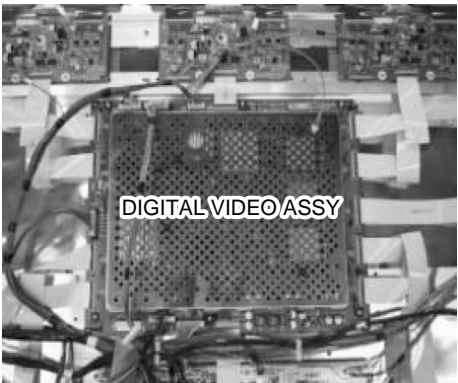


- ② Clearance of connector main frame and lever is 1.5mm - around 2mm, and lock is removed. (be damaged when it goes down more than this.)

Draw out Flexible Flat Cable lightly to arrow orientation, and please pull up.





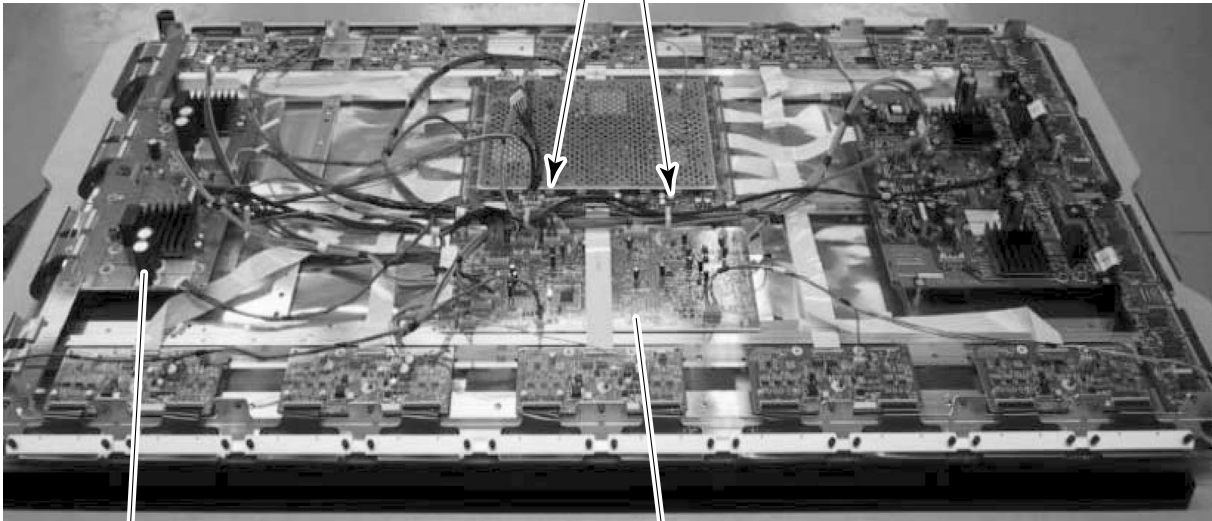


DIGITAL VIDEO ASSY

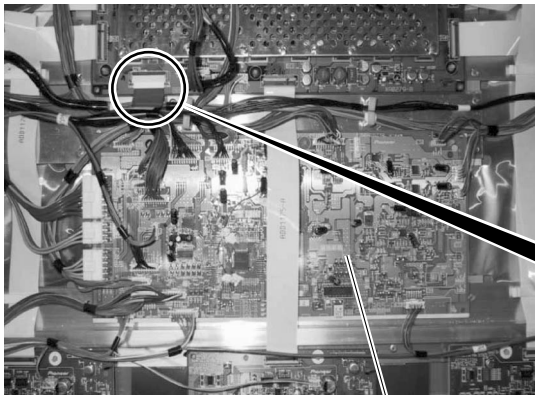


Y DRIVE ASSY

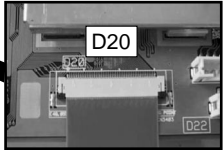
Wire Assy is inserted in a wire saddle, and it is controlled, and it is touched in bottom if possible

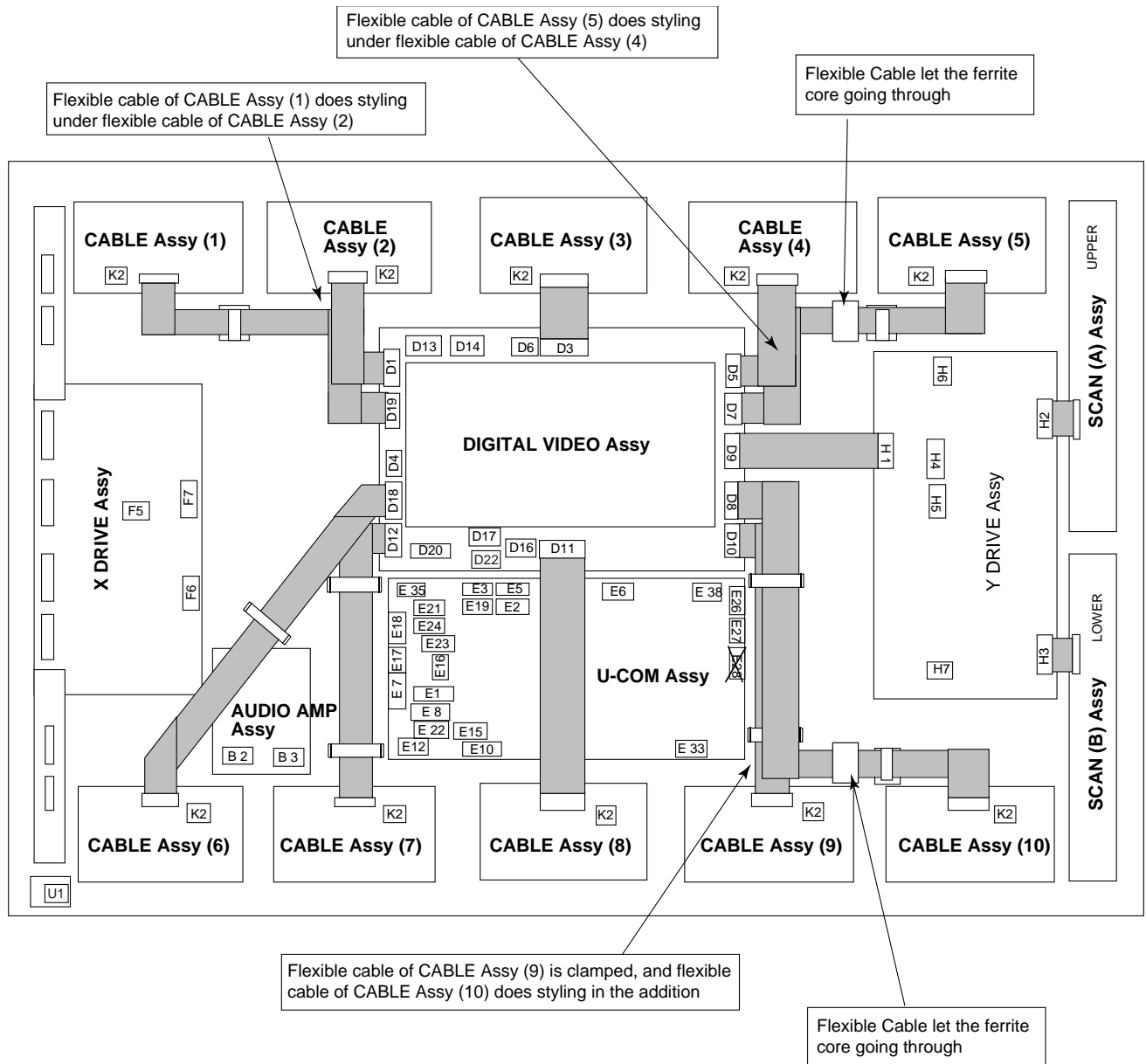


X DRIVE ASSY



U-COM ASSY

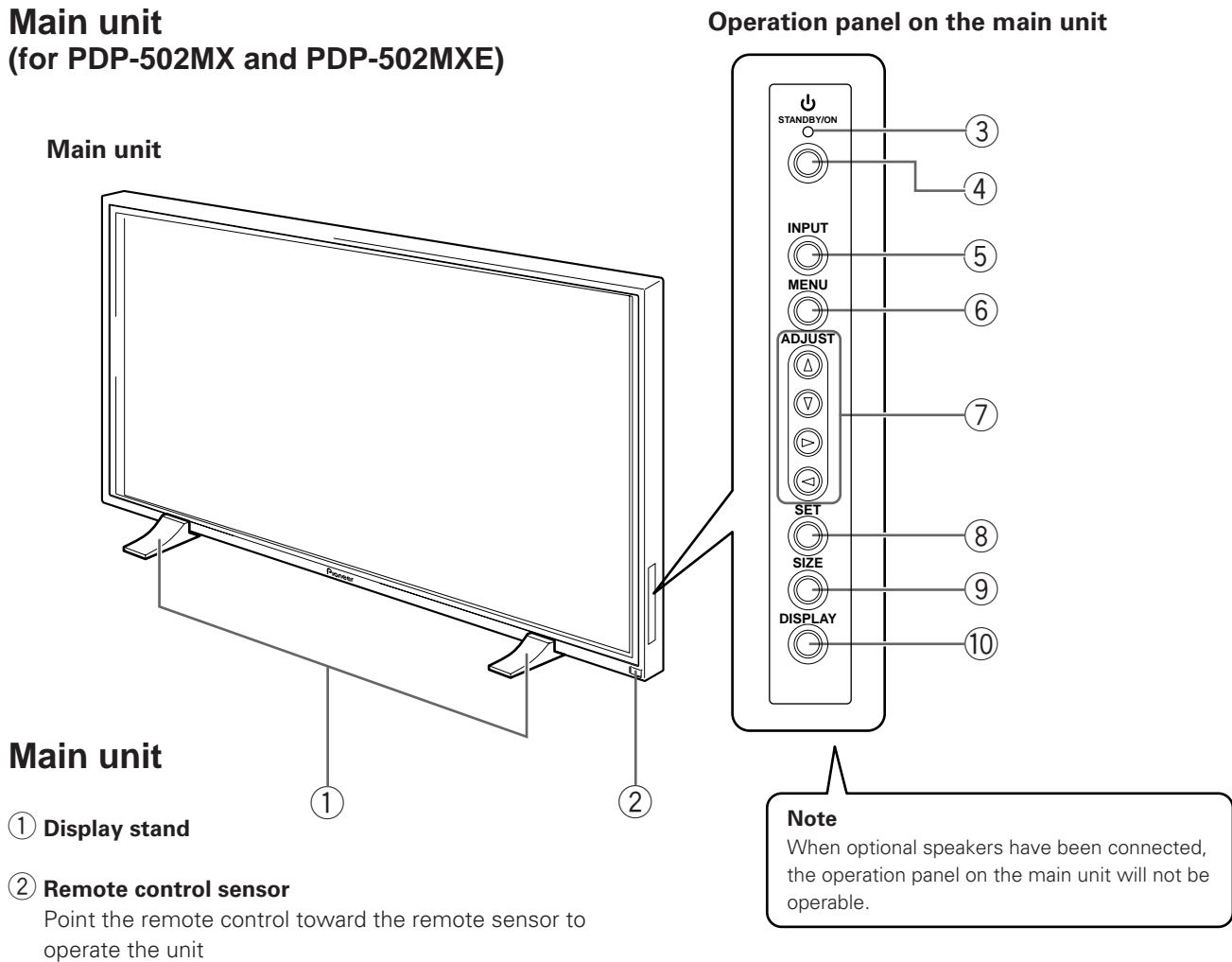




8. PANEL FACILITIES AND SPECIFICATIONS

■ PANEL FACILITIES

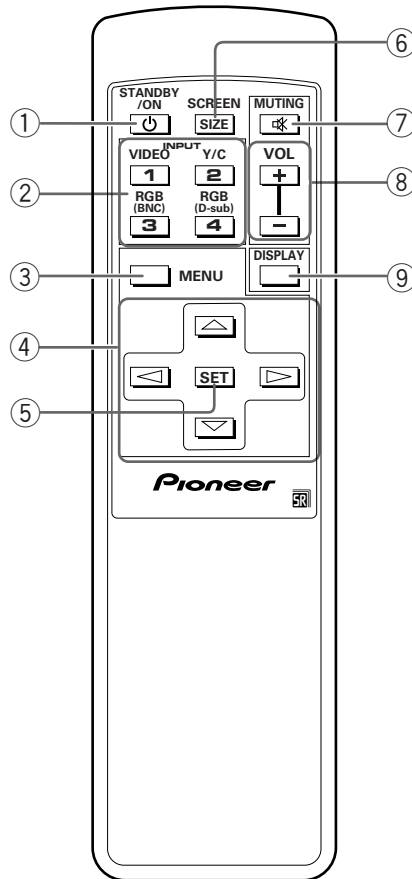
Main unit
(for PDP-502MX and PDP-502MXE)



Operation panel on the main unit

- ③ **⏻ STANDBY/ON indicator**
This indicator is red during standby mode, and turns to green when the unit is in the operation mode.
- ④ **STANDBY/ON button**
Press to put the display in operation or standby mode.
- ⑤ **INPUT button**
Press to select input.
- ⑥ **MENU button**
Press to open and close the on-screen menu.
- ⑦ **ADJUST (▲/▼/▶/◀) buttons**
Use to navigate menu screens and to adjust various settings on the unit.
Usage of cursor buttons within operations is clearly indicated in the on-screen display.
- ⑧ **SET button**
Press to adjust or enter various settings on the unit.
- ⑨ **SIZE button**
Press to manually select the screen size.
- ⑩ **DISPLAY button**
Press to view the unit's current input and setup mode.

Remote Control Unit (for PDP-502MX and PDP-502MXE)



① **STANDBY/ON button**

Press to put the unit in operation or standby mode.

② **INPUT buttons**

Use to select the input.

③ **MENU button**

Press to open and close the on-screen menu.

④ **ADJUST (▲/▼/►/◄) buttons**

Use to navigate menu screens and to adjust various settings on the unit.

Usage of cursor buttons within operations is clearly indicated at the bottom the on-screen menu display.

⑤ **SET button**

Press to adjust or enter various settings on the unit.

⑥ **SCREEN SIZE button**

Press to manually select the screen size.

⑦ **MUTING button**

Press to mute the volume.

⑧ **VOL (+/-) buttons**

Use to adjust the volume.

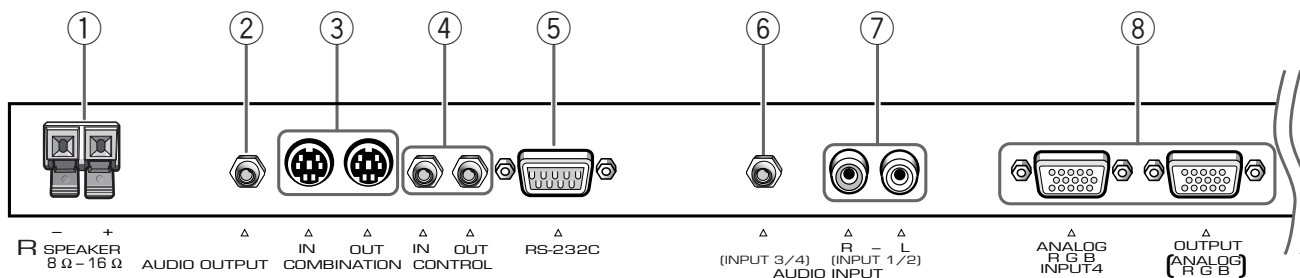
⑨ **DISPLAY button**

Press to view the unit's current input and setup mode.

Control Panel (for PDP-502MX)

On this unit there are 4 input system terminals and 2 output system terminals.

There are also CONTROL terminals for connection of PIONEER components with the  mark.



① SPEAKER (R) terminal

For connection of an external right speaker.
Connect a speaker whose impedance is 8 -16 Ω .


② AUDIO OUTPUT (Stereo mini jack)

Use to output the audio of the selected source component connected to this unit to an AV amplifier or similar component.

③ COMBINATION IN/OUT DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.

These terminals are used in the factory setup.

④ CONTROL IN/OUT

For connection of PIONEER components that bear the  mark. Making CONTROL connection enables control of this unit as a component in a system.

⑤ RS-232C DO NOT MAKE ANY CONNECTIONS TO THIS TERMINAL.

This terminal is used in the factory setup.

⑥ AUDIO INPUT (Stereo mini jack)

Use to obtain sound when INPUT3 or INPUT4 is selected.

Connect the audio output jack of components connected to INPUT3 or INPUT4 to this unit.

⑦ AUDIO INPUT (Pin jack)

Use to obtain sound when INPUT1 or INPUT2 is selected.

Connect the audio output jack of components connected to INPUT1 or INPUT2 to this unit.

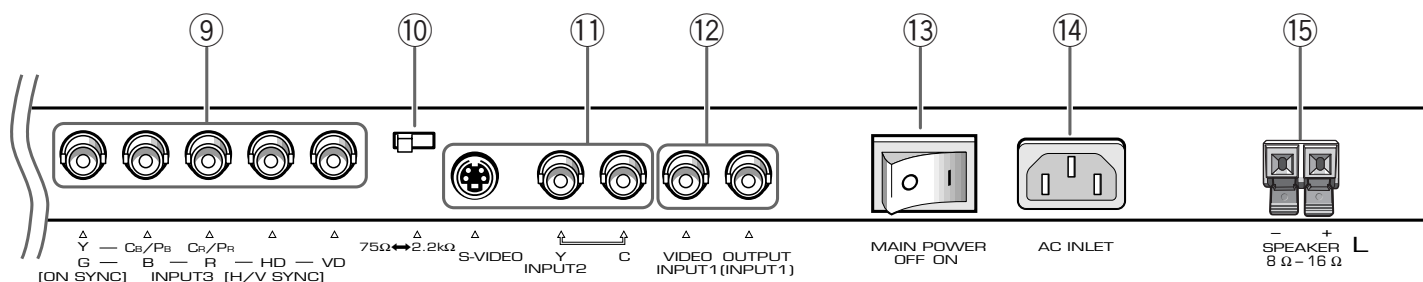
NOTE: The left audio channel (L) jack is not compatible with monaural input sources.

⑧ INPUT4

For connection of a personal computer (PC) or similar component. Make sure that the connection made corresponds to the format of the signal output from the connected component.

Use the INPUT4 OUTPUT terminal to output the video signal to an external monitor or other component.

Note: The video signal will not be output from the INPUT4 OUTPUT terminal when the main power of this unit is off or in standby mode.



⑨ INPUT3

For connection of components that have RGB or component output jacks such as a personal computer, DVD player, or external RGB decoder.

⑩ Synchronizing signal impedance selector switch

Depending on the connections made at INPUT3, it may be necessary to set this switch to match the output impedance of the connected component's synchronization signal.

When the output impedance of the component's synchronization signal is above 75 Ω , set this switch to the 2.2 k Ω position.

⑪ INPUT2

For connection of components that have an S-video output jack or Y/C separate video output jacks such as a video deck, video camera, laser disc player, or DVD player.

Note: Do not use both the S-VIDEO jack and the BNC jacks in parallel. Doing so may cause this unit to malfunction or become damaged.

⑫ INPUT1

For connection of components that have a composite video output jack such as a video deck, video camera, laser disc player, or DVD player.

Use the INPUT1 OUTPUT jack to output the video signal to an external monitor or other component.

Note: The video signal will not be output from the INPUT1 OUTPUT jack when the main power of this unit is off or in standby mode.

⑬ MAIN POWER switch

Use to switch the main power of the unit on and off.

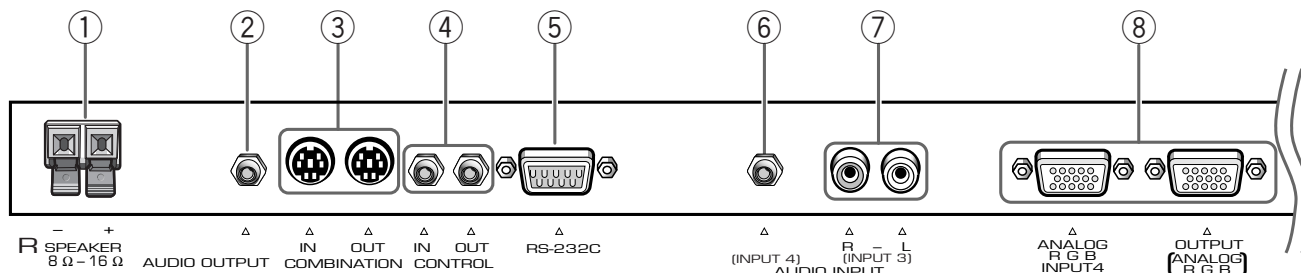
⑭ AC INLET

Use to connect the supplied power cord to an AC outlet.

⑮ SPEAKER (L) terminal

For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω .

Control Panel (for PDP-502MXE)



① SPEAKER (R) terminal

For connection of an external right speaker.
Connect a speaker whose impedance is 8 -16 Ω.


② AUDIO OUTPUT (Stereo mini jack)

Use to output the audio of the selected source component connected to this unit to an AV amplifier or similar component.

③ COMBINATION IN/OUT DO NOT MAKE ANY CONNECTIONS TO THESE TERMINALS.

These terminals are used in the factory setup.

④ CONTROL IN/OUT

For connection of PIONEER components that bear the  mark. Making CONTROL connection enables control of this unit as a component in a system.

⑤ RS-232C DO NOT MAKE ANY CONNECTIONS TO THIS TERMINAL.

This terminal is used in the factory setup.

⑥ AUDIO INPUT (Stereo mini jack)

Use to obtain sound when INPUT4 is selected.
Connect the audio output jack of components connected to INPUT4 to this jack.

⑦ AUDIO INPUT (Pin jack)

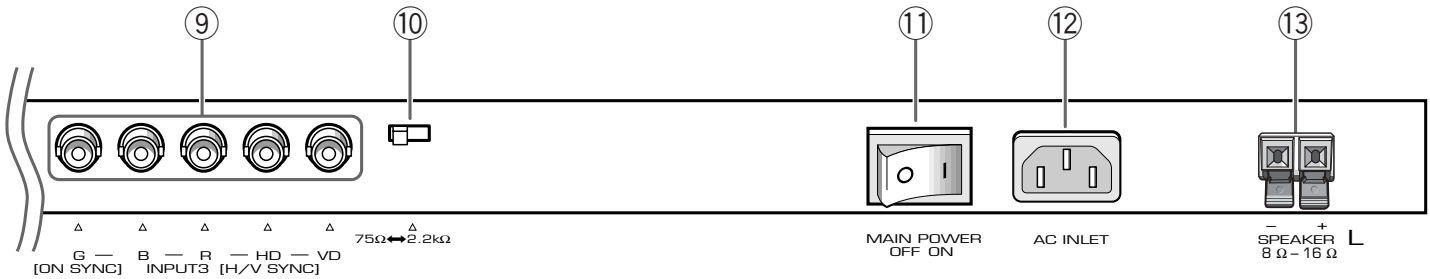
Use to obtain sound when INPUT3 is selected.
Connect the audio output jack of components connected to INPUT3 to these jacks.

NOTE: The left audio channel (L) jack is not compatible with monaural input sources.

⑧ INPUT4

For connection of a personal computer (PC). Make sure that the connection made corresponds to the format of the signal output from the connected component. Use the INPUT4 OUTPUT terminal to output the RGB signal to an external monitor or other component.

Note: The RGB signal will not be output from the INPUT4 OUTPUT terminal when the main power of this unit is off or in standby mode.



⑨ INPUT3

For connection of a personal computer.

⑩ Synchronizing signal impedance selector switch

Depending on the connections made at INPUT3, it may be necessary to set this switch to match the output impedance of the personal computer's synchronization signal.

When the output impedance of the personal computer's synchronization signal is above 75 Ω, set this switch to the 2.2 kΩ position.

⑪ MAIN POWER switch

Use to switch the main power of the unit on and off.

⑫ AC INLET

Use to connect a power cord to an AC outlet.

⑬ SPEAKER (L) terminal

For connection of an external left speaker. Connect a speaker that has an impedance of 8 -16 Ω.

■ SPECIFICATIONS

● For PDP-502MX

General

Light emission panel 50 inch plasma display panel
 Number of pixels 1280 x 768
 Power supply AC 100 - 120 V, 50/60 Hz
 Power consumption 470 W
 Standby power consumption 0.6 W
 External dimensions 1218 (W) x 714 (H) x 98 (D) mm
 47-31/32 (W) x 28-1/8 (H) x 3-7/8 (D) in.
 (when using table top stand)
 1218 (W) x 737 (H) x 300 (D) mm
 47-31/32 (W) x 29-1/32 (H) x 11-13/16 (D) in.
 Weight 40.3 kg (88 lbs. 14 oz)
 (including table top stand) 41 kg (90 lbs. 7 oz)
 Operating temperature range 0 to 40 °C (32 to 104 °F)
 Operating atmospheric pressure range
 0.8 to 1.1 atmospheric pressure

Input/output

Video

INPUT 1

(Input)

BNC jack
 • Composite video signal
 1 Vp-p/75 Ω /negative sync.

(Output)

BNC jack
 75 Ω /with buffer

INPUT 2

(Input)

① S terminal (Mini DIN 4 pin)
 ② BNC jack (x2)
 • Y/C separate video signal (S2 compatible)
 Y ... 1 Vp-p/75 Ω /negative sync.
 C ... 0.286 Vp-p/75 Ω (NTSC)
 0.3 Vp-p/75 Ω (PAL)

INPUT 3

(Input)

BNC jack (x5)
 ① RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω /no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 75 Ω or 2.2 k Ω
 (impedance switch)
 G ON SYNC ...
 1 Vp-p/75 Ω /negative sync.
 ② Component video signal
 Y ... 1 Vp-p/75 Ω /negative sync.
 C_B/P_B, C_R/P_R
 ... 0.525 Vp-p/75 Ω
 (75% saturation level)

INPUT 4

(Input)

Mini D-sub 15 pin (socket connector)
 ① RGB signal (G ON SYNC compatible)
 RGB ... 0.7 Vp-p/75 Ω /no sync.
 HD/CS, VD ... TTL level
 /positive and negative polarity/
 2.2 k Ω
 G ON SYNC
 ... 1 Vp-p/75 Ω /negative sync.
 *Compatible with Microsoft's Plug & Play
 (VESA DDC1/2B)
 ② Component video signal
 Y ... 1 Vp-p/75 Ω /negative sync.
 C_B/P_B, C_R/P_R
 ... 0.525 Vp-p/75 Ω
 (75% saturation level)

(Output)

Mini D-sub 15 pin connector (socket)
 75 Ω /with buffer

Audio

(Input)

AUDIO INPUT (for INPUT 1/2)
 Pin jack (x2)
 L/R ... 500mVrms/more than 10 k Ω

AUDIO INPUT (for INPUT 3/4)
 Stereo mini jack
 L/R ... 500mVrms/more than 10 k Ω

(Output)

AUDIO OUTPUT
 Stereo mini jack
 L/R ... 500mVrms (max)/less than 5 k Ω

SPEAKER
 L/R ... 8 – 16 Ω /2W +2W (at 8 Ω)

Control

RS-232C ... D-sub 9 pin (pin connector)
 COMBINATION IN/OUT
 ... Mini DIN 6 pin (x2)
 CONTROL IN/OUT ... monaural mini jack (x2)

Accessories

Power cord	1
Pin/BNC conversion adaptor	1
Remote control unit	1
Remote control unit case	1
AA (R6/UM-3) batteries	2
Cleaning cloth	1
Speed clamp	2
Bead band	2
Warranty	1
Operations Instructions	1
Display stand	2
Washer (large)	2
Washer (small)	2
Hex hole bolt (M8X40)	2

- Due to improvements, specifications and design are subject to change without notice.

● For PDP-502MXE

General

Light emission panel	50 inch plasma display panel
Number of pixels	1280 x 768
Power supply	AC 100 – 240 V, 50/60 Hz
Rated current	5.4 – 2.2 A
Standby power consumption	0.6 W
External dimensions	1218 (W) x 714 (H) x 98 (D) mm
(when using display stand)	
.....	1218 (W) x 737 (H) x 300 (D) mm
Weight	40.3 kg
(including display stand)	41.0 kg
Operating temperature range	0 to 40 °C
Operating atmospheric pressure range	
.....	0.8 to 1.1 atmospheric pressure

Input/output

Video

INPUT 3

Input	BNC jack (x5)
	RGB signal (G ON SYNC compatible)
	RGB ... 0.7 Vp-p/75 Ω/no sync.
	HD/CS, VD ... TTL level
	/positive and negative polarity/
	75 Ω or 2.2 kΩ
	(impedance switch)
	G ON SYNC ...
	1 Vp-p/75 Ω/negative sync.

INPUT 4

Input	Mini D-sub 15 pin (socket connector)
	RGB signal (G ON SYNC compatible)
	RGB ... 0.7 Vp-p/75 Ω/no sync.
	HD/CS, VD ... TTL level
	/positive and negative polarity
	/2.2 kΩ
	G ON SYNC
	... 1 Vp-p/75 Ω/negative sync.
	*Compatible with Microsoft's Plug & Play
	(VESA DDC1/2B)

Output	Mini D-sub 15 pin (socket connector)
	75 Ω/with buffer

Audio

Input	AUDIO INPUT (for INPUT3)
	Pin jack (x2)
	L/R ... 500mVrms/more than 10 kΩ

	AUDIO INPUT (for INPUT4)
	Stereo mini jack
	L/R ... 500mVrms/more than 10 kΩ

Output	AUDIO OUTPUT
	Stereo mini jack
	L/R ... 500mVrms (max)/less than 5 kΩ

	SPEAKER
	L/R ... 8 – 16 Ω/2W +2W (at 8 Ω)

Control

CONTROL IN/OUT ...	monaural mini jack (x2)
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Accessories

Remote control unit	1
Remote control unit case	1
AA (R6/UM-3) batteries	2
Cleaning cloth	1
Speed clamp	2
Bead band	2
Operating Instructions	1
Display stand	2
Washer (large)	2
Washer (small)	2
Hex hole bolt (M8X40)	2

- Due to improvements, specifications and design are subject to change without notice.

Accessories

